120 Iber Road, Suite 103
Ottawa, Ontario K2S 1E9
Tel. (613)836-0856
Fax (613) 836-7183
www.DSEL.ca

ADEQUACY OF SERVICES REPORT

FOR

BARRHAVEN CONSERVANCY DEVELOPMENT CORPORATION

BARRHAVEN CONSERVANCY WEST

CITY OF OTTAWA

PROJECT NO.: 21-1226

OCTOBER 2021
1ST SUBMISSION

ADEQUACY OF SERVICES REPORT
FOR
BARRHAVEN CONSERVANCY DEVELOPMENT CORPORATION

BARRHAVEN CONSERVANCY WEST

PROJECT NO: 21-1226

TABLE OF CONTENTS

FIGURES AND DRAWINGS

TABLES

APPENDICES

Appendix E - Permissible Grade Raise Plan – Paterson Group

ADEQUACY OF SERVICES REPORT
FOR
BARRHAVEN CONSERVANCY DEVELOPMENT CORPORATION

BARRHAVEN CONSERVANCY WEST

CITY OF OTTAWA
PROJECT NO: 21-1226

1.0 INTRODUCTION

David Schaeffer Engineering Limited (DSEL) has been retained to prepare an Adequacy of Services Report (AES) in support of the Barrhaven ***Conservancy West*** development area on behalf of Barrhaven Conservancy Development Corporation (BCDC).

The overall Conservancy land area is approximately 139.7 ha (all land use components) and is located within the City of Ottawa urban boundary in the Barrhaven ward. As illustrated in ***Figure 1***, the subject site is located north of the Jock River, east of Highway 416, west of Borrisokane Road and south of McKenna Casey Drive.

The focus of this report is for the ***Conservancy West*** land area that is located west of the existing Foster Ditch which bisects the overall BCDC landholdings and consists of vacant land. The subject lands are approximately 35.6ha in area (including all right-of-ways, residential area and park areas) and the proposed development draft plan ***Figure 2*** is provided for reference. The development area is currently zoned Development Reserve (DR) and is planned to be developed with a mix of detached single homes, townhomes, park blocks, open spaces and a road network.

A previous draft plan application has been submitted for the BCDC landholdings to the east of this development area with draft approval anticipated in October 2021.

The Conservancy West development area is outside of the Jock River 100-year limit as confirmed by the Rideau Valley Conservation Authority (RVCA). Refer to the RVCA confirmation letter in ***Appendix D***. The 100-year regulatory flood line is demonstrated in Drawing 1 (Grading) and Drawing 3 (Stormwater) in the ***Appendix***.

The objective of this report is to provide sufficient detail to demonstrate that the proposed development area can be supported by municipal services.

1.1 Existing Conditions

The initial ***Conservancy West*** property topography is relatively flat with the existing ground elevations varying between 91 m and 92 m. All existing flows are either overland to the Jock River or conveyed to the Jock River by way of the O'Keefe Municipal Drain or the Foster Ditch (and their tributaries) which run through the subject property. The property is within the Jock River watershed and is under the jurisdiction of the RVCA.

1.2 Summary of Pre-Consultation

The following provides a summary of the pre-consultation:

1.2.1 Ministry of the Environment, Conservation and Parks (MECP)

Prior consultations associated with the Conservancy Phase 1 development were previously undertaken for the approval of that phase of the development area.

A pre-consultation with the local MECP office has not yet been completed for the Conservancy West development area until the functional design details and requirements have been established with the City of Ottawa.

1.2.2 Rideau Valley Conservation Authority (RVCA)

Multiple consultations, analysis and submissions were coordinated with the RVCA to establish that the development area is outside of the Jock River 100-year limit. See the RVCA documentation in ***Appendix D*** for reference.

1.3 Existing Permits / Approvals

Key approvals associated with the advancement of development of the Barrhaven Conservancy area, are presented in the following table. The most relevant approval is the Environmental Compliance Approval (ECA) for the South Nepean Collector sanitary trunk sewer that future phases will be connecting to. The document is provided in ***Appendix A*** for reference.

Table 1A: Existing Permits / Approvals

Agency	Approval Type	Approval Number	Remarks
Ministry of the Environment, Conservation and Parks (MECP)	Environmental Compliance Approval	# 8129-AB7LDF (June 23, 2016)	South Nepean Collector existing approval (sanitary outlet for development area)
Rideau Valley Conservation Authority (RVCA)	RVCA Letter of Permission under O.Reg. 174/06	RV5-4419	Letter of permission related to placement of fill within a regulated area.

1.4 Required Permits / Approvals

The City of Ottawa must approve detailed engineering design drawings and reports prior to future construction of the municipal infrastructure identified in this report. This will occur as part of the Plan of Subdivision application process and detailed design.

Based on pre-consultation with City staff, the additional approvals and permits listed in the following table are expected to be required prior to construction of the municipal infrastructure detailed herein. Please note that other permits and approvals may be required, as detailed in the other studies to be submitted as part of the Plan of Subdivision application (e.g. *Tree Conservation Report, Environmental Impact Statement, Phase 1 Environmental Site Assessment, Headwater Drainage Feature Assessment, etc.)*

Table 1B: Required Permits/Approvals

Agency	Permit/Approval Required	Trigger	Remarks
MECP	Environmental Compliance Approval	Construction of new sanitary and storm sewers throughout the subdivision.	The MECP will review the sanitary and storm sewer design through the City of Ottawa transfer of review process.
MECP	Environmental Compliance Approval	Implementation of oil-grit separator units for quality control.	The MECP will review the stormwater management appurtenance design through the City of Ottawa transfer of review process.
MECP	Permit to Take Water	Construction of proposed land uses (e.g. basements for residential homes) and services.	Pumping of groundwater may be required during construction, given groundwater conditions and proposed land uses and on-site/off-site municipal infrastructure.

City of Ottawa	MECP Form 1 – Record of Watermains Authorized as a Future Alteration.	Construction of watermains throughout the subdivision	The City of Ottawa will review the watermains on behalf of the MECP through the Form 1 – Record of Watermains Authorized as a Future Alteration.
RVCA	Permit under Ontario Regulation 174/06, RVCA's Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulation	Grading (proposed development & potential temporary access roads) within the subject lands (i.e. crossing of Foster Ditch)	Supporting applications and documentation as required through consultation with the RVCA.
RVCA	Outlets to Jock River	In conjunction with issuance of MECP applications	Supporting applications and documentation as required through consultation with the RVCA.
RVCA	Alteration to Watercourses (O'Keefe Drain)	As necessary through consultation with the RVCA	Supporting applications and documentation as required through consultation with the RVCA.
City of Ottawa	Commence Work Notification (CWN)	Construction of new sanitary and storm sewers throughout the subdivision	The City of Ottawa will issue a commence work notification for construction of the sanitary and storm sewers once an approval is issued by the MECP.

2.0 GUIDELINES, PREVIOUS STUDIES, AND REPORTS

2.1 Existing Studies, Guidelines, and Reports

The following studies were utilized in the preparation of this report.

- Ottawa Sewer Design Guidelines,
  City of Ottawa, *SDG002,* October 2012
  (City Standards)

  - Technical Bulletin ISDTB-2014-01
    City of Ottawa, February 5, 2014
    (ITSB-2014-01)
  - Technical Bulletin PIEDTB-2016-01
    City of Ottawa, September 6, 2016
    (PIEDTB-2016-01)

- Technical Bulletin ISTB-2018-01
  City of Ottawa, March 21, 2018
  (ISTB-2018-01)
- Technical Bulletin ISTB-2018-04
  City of Ottawa, June 27, 2018
  (ISTB-2018-04)

➢ Ottawa Design Guidelines – Water Distribution
City of Ottawa, July 2010.
(Water Supply Guidelines)

- Technical Bulletin ISD-2010-2
  City of Ottawa, December 15, 2010.
  (ISD-2010-2)
- Technical Bulletin ISDTB-2014-2
  City of Ottawa, May 27, 2014.
  (ISDTB-2014-2)
- Technical Bulletin ISTB-2018-02 / ISTB-2019-02
  City of Ottawa, March 21, 2018 / July 08, 2019
  (ISTB-2018-02 / ISTB-2019-02)
- Technical Bulletin ISDTB-2021-03
  City of Ottawa, August 18, 2021
  (ISTB-2021-03)

➢ Design Guidelines for Sewage Works,
Ministry of the Environment, Conservation and Parks, 2008. (formerly MOECC)
(MECP Design Guidelines)

➢ Stormwater Planning and Design Manual,
Ministry of the Environment, March 2003.
(SWMP Design Manual)

➢ City of Ottawa Official Plan,
adopted by Council 2003.
(Official Plan)

➢ City of Ottawa Secondary Plan – Former Nepean – South Nepean Urban Area – Areas 9 and 10,
Adopted by Council 2003.
(Secondary Plan)

➢ South Nepean Collector: Phase 2 Hydraulics Review / Assessment Technical Memorandum
Novatech, August 2015
(Novatech SNC Memo)

- South Nepean Collector: Phase 2 Preliminary Design Report,
  Novatech, March 2016
  (Novatech SNC Design Report)
- Strandherd Drive Widening Project, South Nepean Collector: Phase 3 Sanitary Flow Calculations
  Novatech, May 2019
  (2019 Novatech SNC Design Report)
- Hydraulic Potable Water Assessment for Barrhaven Conservancy Development Corporation, March 2021
  (Stantec Hydraulic Analysis)
- Jock River Reach One Subwatershed Study
  Stantec, 2007
  (Jock River SWS)
- Geotechnical Investigation, Proposed Residential Development, Conservancy Lands West, Ottawa, Ontario
  Paterson Group, September 27, 2019 (Project No. PG5036-1)
  (Geotechnical Report)
- Environmental Impact Statement for Barrhaven Conservancy East
  Kilgour & Associates Ltd., July 29, 2020
  (Kilgour EIS)

3.0 WATER SUPPLY SERVICING

3.1 Existing Water Supply Services

The subject property is located adjacent to the City of Ottawa's Pressure Zone (PZ) 3SW (previously known as PZ BARR). PZ SUC services the lands that are east of the subject property, as well as south of the Jock River.

The City of Ottawa has recently reconfigured the pressure zones servicing Barrhaven and the South Urban Community (SUC) in order to improve reliability and efficiency and to increase pumping capacity to accommodate for future growth in the area. There are three pumping stations servicing Zone 3SW and Zone SUC as follows: the Fallowfield Road Pumping Station (FRPS), the Barrhaven Pumping Station (BPS) and the Ottawa South Pumping Station (OSPS).

The future watermains to be implemented through the detailed design process for the adjacent Conservancy East lands will facilitate water service to the West area. There are future trunk watermains proposed in the vicinity of Conservancy East area which will provide water service to the development lands. These services will be further extended to provide the requisite water supply to this development area.

3.2 Water Supply Servicing Design

Stantec Consulting Limited was previously retained to perform a hydraulic assessment for the Barrhaven Conservancy Lands. The ***Hydraulic Potable Water Assessment for Barrhaven Conservancy Development Corporation (Stantec Hydraulic Analysis)*** prepared by Stantec (March 2021) is enclosed in ***Appendix B*** for reference. The analysis reviewed the adjacent pressure zones and various servicing alternatives. The subject property was deemed serviceable and the analysis offered a number of servicing alternatives that could adequately service the subject property conforming to all relevant City and Ministry of the Environment, Conservation and Parks (MECP) Guidelines and Policies.

The proposed water servicing layout is presented in ***Figure 3*** and shows the anticipated water extension from the Conservancy East area. The ***Stantec Hydraulic Analysis*** indicates that there are several options to provide water servicing to support the development of the site, extending from existing or planned infrastructure. Prior coordination with City staff (and further discussion at a February 11, 2021 meeting) has indicated that an acceptable approach would be for service to be provided from the recently reconfigured South Urban Community (SUC) pressure zone (identified as Alternative '2C' in the ***Stantec Hydraulic Analysis***). This new zone was established in order to improve reliability and allow for accommodation of future growth. As such, the water supply network will be expanded through neighboring properties within the PZ SUC Nepean Town Centre (NTC) development area (i.e. Claridge's "Burnett Lands" development at 3370 Greenbank Road – a current General Plan of services is provided in ***Appendix B*** for reference) with ultimate watermain concepts in line with the prior Stantec study completed titled *"Kennedy-Burnett Potable Water Master Servicing Study (April 2014)"* (excerpt provided in ***Appendix B***). Coordination with Claridge and City staff has been undertaken in order to facilitate an appropriate watermain stub location from that development area (see emails and supporting information in ***Appendix B***). The ***Stantec Hydraulic Analysis*** assessed the feeds as being a 200mm connection at Claridge's development (expanding to a 300mm) and a 300mm extension from Chapman Mills Drive to feed into the Barrhaven Conservancy development areas. Once extended to service the Conservancy East area the watermain network will be further extended to the West area. At the time of detailed design, detailed hydraulic modelling will be undertaken to verify that the proposed on-site and off-site watermains are in conformance with all relevant criteria. Other external watermain expansions, with the potential of providing additional system redundancies to the overall Conservancy development area from south of the Jock River, will be further discussed with City staff through the draft plan approval process.

The following table summarizes the relevant Water Supply Design Criteria which will be employed in the design of the subject property.

Table 2A: Water Supply Design Criteria

Design Parameter	Value
Extracted from Section 4: Ottawa Design Guidelines, Water Distribution (July 2010)	
Residential – Detached Single	3.4 p/unit
Residential – Townhome/ Semi	2.7 p/unit
Residential – Apartment	1.8 p/unit
Minimum Watermain Size	150 mm diameter
Minimum Depth of Cover	2.4 m from top of watermain to finished grade
During normal operating conditions desired operating pressure is within	350 kPa and 480kPa
During fire flow operating pressure must not drop below	140 kPa
Stantec Hydraulic Analysis, Stantec, July 20, 2017 for Population Exceeding 3000 Persons	
Residential – Detached Single	180 L/cap/day
Residential – Rear Lane Town	198 L/cap/day
Residential – Back-to-Back	198 L/cap/day
Outdoor Water Demand	1049 L/unit/day (single detached)
Basic Day	Population x Demand
Max Day	Basic Day + Outdoor Water Demand

3.2.1 Fire Flow Demand

Fire Flow requirements are to be confirmed in accordance with Local Guidelines (Fire Underwriters Survey), City of Ottawa Water Supply Guidelines, and the Ontario Building Code, upon development of detailed concepts for the detached single homes, townhouses, and the park. For planning purposes, fire flow estimates are provided in the preliminary water demand estimate (***Appendix B*** and the following table) based on the information available in the preliminary concept plan and comparable recent developments in the City of Ottawa.

3.2.2 Boundary Conditions

To support the future development of a hydraulic analysis for the subdivision, boundary conditions are expected to be provided by the City of Ottawa for the preliminary water demands.

3.2.3 Water Demand Calculations

A summary of water demands for the subject site is presented in the following table as derived from the criteria above and the Stantec Hydraulic Analysis found in ***Appendix B***. The draft plan approval process for the Conservancy East area has advanced since the preparation of the March 2021 ***Stantec Hydraulic Analysis*** and is currently yielding a unit count of ~1,380 units. As well, the proposed unit yield for the current application for Conservancy West is 1,036 units. The demand estimates in the table below from the March 2021 reporting are higher than the newly noted unit counts therefore the prior analysis findings are conservative and still relevant.

Table 2B: Water Demand Estimate (1)

	Unit Count			**Pop**	**L/c/d**	**BSDY (MLD)**	**MXDY (MLD)**
	Conservancy East	**Conservancy West**	**Total**				
Single Family	730	775	1,505	5,117	180	0.92	2.50
Townhouse	445	525	970	2,619	198	0.52	0.52
Rear-Lane Townhouse	165	-	165	446	198	0.09	0.09
High Density	100	-	100	210	219	0.05	0.05
Total	***1,440***	***1,300***	***2,740***	***8,392***		***1.58***	***3.16***
Notes: (1) Water demand details derived from Stantec Hydraulic Analysis. See Appendix D for report details.							

3.3 Water Supply Conclusion

The subject lands are have been reviewed by Stantec to confirm that servicing is feasible from the SUC pressure zone. Future watermain extensions from Nepean Town Centre development areas will facilitate servicing to the Conservancy East lands via watermain extension along the future Chapman Mills Drive extension and through the Claridge "Burnett Lands" development area and extended to the Conservancy West development area in future. Future modelling at the detailed design stage will confirm phasing of the extensions of trunk watermains and sizing of the local watermain network. The proposed water supply design will conform to all relevant City and MECP Guidelines and Policies.

4.0 WASTEWATER SERVICING

4.1 Existing Wastewater Services

Per the ***South Nepean Collector (SNC) Wastewater Servicing Study and Functional Design Report*** by Dillon in October 2003 ***(Dillon SNC Report)***, the subject property is tributary to the South Nepean Collector (SNC) sewer as urban development land.

The SNC (previously called the Jock River Collector) sewer operates north of the subject property within Strandherd Drive prior to travelling south down a Chapman Mills Drive (CMD) and then turns eastward within the future CMD right-of-way (ROW).

The ***South Nepean Collector Phase 2: Hydraulics Review / Assessment*** memo was prepared by Novatech Engineering Consultants on August 20, 2015 ***(Novatech SNC Memo)*** to provide an update to the sanitary design flows for Phase 2 of the South Nepean Collector, as previously documented in the ***South Nepean Collector (SNC) – Functional Design Report and Update*** by Dillon in 2012 ***(Dillon SNC Report and Update)***. In addition, Novatech is also currently the engineer of record for the design and implementation of the Phase 3 extension of the SNC.

4.2 South Nepean Collector Phase 3 – Preliminary Design

The 2015 ***Novatech SNC Memo*** contemplated that the Conservancy Phase 1 development area (north of the Fraser-Clarke Watercourse) would be serviced by the 900 mm diameter SNC sewer running adjacent to the property within the future extension of CMD. This is represented by area “A6-E” within the “*Sanitary Drainage Areas and Land Use – Fig.1”* plan within the 2015 Novatech memo (note that the actual tributary area and population varied slightly).
For the Phase 3 extension of the SNC, Novatech has prepared another review of sanitary flows within their technical memorandum titled “***Strandherd Drive Widening Project***, ***South Nepean Collector Phase 3: Sanitary Flow Calculations***” May 30, 2019 ***(2019 Novatech SNC Memo).*** The memorandum, along with the design sheet calculations from the Novatech memo, are provided in ***Appendix C*** for reference along with DSEL annotations on key items in the figure and design sheets. The updated “*Sanitary Drainage Areas and Land Use – Fig.1” (May 2019)* plan is essentially reflective of the same tributary information that was provided in the 2015 study (the plan has been marked up to reflect the Conservancy areas as a frame of reference). The associated design sheet also reflects updated City wastewater design criteria that was not accounted for in the 2015 study and is discussed further in the following section.
Report excerpts are provided in ***Appendix C*** for the SNC Phase 2 analysis as well as draft information associated with the Phase 3 extension. The location of the SNC sewer is shown in ***Figure 4***.

4.3 Wastewater Design

The subject property is planned to be serviced by an internal gravity sanitary sewer system that is to generally follow the local road network with select servicing easements as required to achieve efficiencies in servicing and grading designs. The wastewater servicing plan can be seen in ***Drawing 4***.

Similar to the proposed Conservancy East development, this report proposes that the drainage area of the SNC sanitary sewer be expanded to include the entirety of the Conservancy property. The sewer network will connect to the off-site SNC sanitary sewer within the future CMD at existing manhole 'SANMH8' as identified in the Novatech SNC Phase 2 design Drawing No. 20 provided in ***Appendix C*** for reference (City contract number ISD14-2033). As noted in the prior section, the 2015 ***Novatech SNC Memo*** was derived flows based on the City guideline parameters of the time (namely 350 L/capita/day, infiltration allowance of 0.28 L/s/ha and commercial properties at 50,000 L/ha/d). The following table summarizes the new City design guidelines and criteria to be applied to the ***Conservancy East*** sewer design as well for the determination of the projected flows to be tributary to the SNC along the frontage of the Conservancy Phase 1 development area.

Table 3: Wastewater Design Criteria

Design Parameter	Value
Current Design Guidelines	
Residential - Single Family	3.4 p/unit
Residential – Townhome/ Semi	2.7 p/unit
Residential – Apartment	1.8 p/unit
Average Daily Demand	280 L/d/person
Peaking Factor	Harmon's Peaking Factor. Max 4.0, Min 2.0
Commercial / Institutional Flows	28,000 L/ha/day
Commercial / Institutional Peak Factor	1.5
Infiltration and Inflow Allowance	0.33 L/s/ha
Park Flows	28,000 L/ha/d
Park Peaking Factor	1.0
Sanitary sewers are to be sized employing the Manning's Equation	$Q = \frac{1}{n} A R^{2/3} S^{1/2}$
Minimum Sewer Size	200mm diameter
Minimum Manning's 'n'	0.013
Minimum Depth of Cover	2.5m from crown of sewer to grade
Minimum Full Flowing Velocity	0.6m/s
Maximum Full Flowing Velocity	3.0m/s
Extracted from Sections 4 and 6 of the City of Ottawa Sewer Design Guidelines, October 2012, and associated Technical Bulletins.	

The ***Conservancy West*** development area will contribute approximately 35.7 ha of drainage area (includes lots, ROWs, blocks and parks) to the downstream sewer systems. This is in addition to the ~57.9 ha contributed by the Conservancy East lands.

The sanitary drainage area information is shown in ***Figure 4*** and the design sheet is enclosed in ***Appendix C*** for reference.

Applying the City of Ottawa's wastewater design criteria to the overall development concept, the estimated peak sanitary flow from the subject property is ~48.81 L/s per the provided design sheet. This is in line with the design sheet from the July 2021 *Master Infrastructure Review* (MIR) which demonstrated a flow of 48.93 L/s (provided in ***Appendix C*** for reference). As noted above, the downstream Conservancy East lands add an additional ~56 L/s of flow. The proposed internal gravity sanitary trunk sewer adequately services the subject property and does not exceed 72% capacity throughout the network.

The proposed peak sanitary flow from the subject property (including Conservancy East and external areas) to the existing SNC sanitary sewer (SANMH 8 in Novatech Drawing No. 20) is ~105 L/s. The addition of the Conservancy Land's peak flow to the peak design flows from the ***2019 Novatech SNC Memo*** results in an updated peak flow of 401.05 L/s to the existing SNC sewer installations downstream of existing SANMH 8. With the inclusion of the subject property, the SNC sanitary sewer along the Conservancy Phase 1 frontage would be at approximately 95% capacity and downstream sections (based on SNC as-built information which had a minimum slope of 0.05%) and can adequately handle the entirety of the Conservancy property's proposed sanitary flows.

When reviewing the projected flows to the SNC, as derived from the *Novatech Phase 2 and Phase 3* SNC data, along with Conservancy Lands design flows, the following is summarized:

Table 4: South Nepean Collector – Projected Flow Updates

Report Reference	Projected Flows at Strandherd/CMD intersection (L/s)	Flow at Conservancy Lands Connection Point (L/s)	Difference From Original 2015 SNC Capacity Design (L/s)
2015 Novatech SNC Memo	384.7[(1)]	423.6	0
2019 Novatech Preliminary Phase 3 Design	282.5[(2)]	308.6[(3)]	-115.0
DSEL inclusion of Conservancy Lands (including Ph1) tributary of ~105.99 ha	282.5	401.05[(4)]	-22.55

(1) See annotated Novatech design sheet “South Nepean Collector – Phase 2 & 3” (August 2015) in Appendix C and associated “Sanitary Drainage Areas and Land Use” Figure 1 dated August 2015.
(2) See annotated Novatech design sheet “South Nepean Collection Phase 3” (September 2019) in Appendix C and associated “Sanitary Drainage Areas and Land Use” Figure 1 dated May 2019
(3) Incorporating the new Phase 3 flows into the 2015 Novatech analysis
(4) See DSEL sanitary flow spreadsheet review of Novatech’s SNC Phase 2 & 3 design sheet data in Appendix C.

The above table demonstrates that with the updates to the SNC design parameters and incorporation of the Conservancy Lands sanitary flows there is a net reduction of 22.55 L/s (from the original design) to the SNC sewer at this location. As such, this translates into no negative impacts to the SNC sewer network downstream of the connection point into the system.

4.4 Wastewater Servicing Conclusion

The subject property will be serviced by local sanitary sewers, an on-site trunk sanitary sewer, and the off-site SNC sanitary sewer as defined in previous reports. This AES proposes the expansion of the drainage areas from the ***2019 Novatech SNC Memo*** to include the entirety of the subject property. There is residual capacity in the downstream SNC providing sufficient capacity for the peak sanitary flows for the subject property, including external commercial and community park flows.

5.0 STORMWATER CONVEYANCE

5.1 Existing Stormwater Drainage

The subject property is within the Jock River watershed. Per the existing topography characterized in available City of Ottawa base mapping, as well as site specific survey, all flows from the subject property are ultimately conveyed to the Jock River by a series of watercourses, sheet flow and minor ditches. The Foster Ditch and the O'Keefe Municipal Drain are the main stormwater conveyances within the Conservancy West property that convey stormwater to the Jock River.

5.2 Proposed Stormwater Management Strategy

Various stormwater strategies were discussed within the Master Infrastructure Review (MIR) prepared previously. Alternatives reviewed were:

Alternative 1 – Oil and Grit Separators & Treatment Train to Naturalized Wetlands*
Alternative 2 – Stormwater Management Wetland Facilities in the Floodplain
Alternative 3 – Stormwater Management Wetland Facilities out of the Floodplain
Alternative 4 – Modified Etobicoke filtration System (MEFS)

For the purposes of this AES Alternative 1 is being advanced as per the evaluation provided in the MIR and per discussions with the City of Ottawa on July 20, 2021. This alternative:

- Provides for the most efficient use of land that would otherwise be occupied by multiple stormwater management ponds (i.e. potentially four ponds, with up to ten forebays based on prior analysis, as well as sediment management areas) for water quality control. The alternative also mitigates against site constraints imposed due to the proximity of the development to the Jock River, and grade raise restrictions along with relatively flat topography;
- Proposes OGS units as part of a treatment train approach that, overall, will provide the required Enhanced Level of Protection (80% total suspended solids (TSS) removal) and have outlets that are above the 2-year event summer water levels on the Jock River;
- As part of a treatment train approach, deep sump catchbasins equipped with catchbasin inserts such the CB Shield™ (certified with third party testing (i.e ETV verified)) to further reduce catchbasin sump sediment re-suspension and optimize TSS removal;
- Proposal is to also incorporate an infiltration-type LID within the right-of-way extending out from catchbasin locations (see ***Figure 5*** in ***Figures & Drawings***). The detailed design process, when detailed grading is available, will define suitable locations in order to yield optimal benefit from this LID. See Section 5.7 for additional LID discussion;

- Has an added benefit of providing hydration with treated stormwater to naturalized channels in the natural heritage corridor connecting to the Jock River, and;
- Has straightforward system maintenance requirements via mobile vacuum trucks that are more readily achieved as part of the City's typical maintenance programs as opposed to the additional efforts required to maintain wet pond forebays (heavy equipment for sediment removal and relocation).

The design for the site proposes to have stormwater flows conveyed through the development area of the subject property via an underground sewer network. The stormwater runoff will be treated before ultimately being released into the natural heritage features and the Jock River as per the ***Jock River Reach One Subwatershed Study*** prepared by Stantec in 2007 ***(Jock River SWS)***.

The proposed stormwater design layout is shown on ***Drawing 3*** with the stormwater management design consisting of:

- A storm sewer system designed to capture at least the minimum design capture events in accordance with the amendment to the storm sewer and stormwater management elements of the Ottawa Design Guidelines – Sewer (Technical Bulletin PIEDTB-2016-01);
- Multiple oil and grit separators (OGS) designed to assist with achieving the required Enhanced Level of Protection per MECP guidelines, along with additional treatment train elements, via treatment of the stormwater captured by the storm sewer network;
- The storm systems will discharge the treated stormwater at multiple outlets located along the natural heritage corridor, connecting via naturalized channels outletting to the Jock River. Discharge locations are demonstrated in ***Drawing 3***;
- Inverts of storm outlets are set at the 2-year summer water levels of the Jock River;
- An on-site road network designed to maximize the available storage within right-of-ways for the 100-year design event, where possible, with controlled release of stormwater to the minor storm system; and
- An overland flow route designed to safely convey stormwater runoff flows in excess of the on-site road storage.

Although quantity control has not typically been required for this reach of the Jock River, as per the ***Jock River SWS***, the quantity of stormwater runoff exiting from the subject property will be minimized by optimizing on-site storage in the sags of the proposed road network, which in turn minimizes the size of downstream storm sewer infrastructure. It is noted that the RVCA is currently reviewing the SWM requirements within the Jock River Reach 1 area. In consideration of this, J.F. Sabourin and

Associates (JFSA) has undertaken a review of the existing quantity control recommendations and the existing, and proposed, development conditions for this area. The findings are presented in the JFSA memorandum *Review of Quantity Control Requirement for Jock River Reach 1 (March 2021)* provided in ***Appendix D*** which concludes that quantity controls will still not be required for this reach of the Jock River.

5.2.1 Post-Development Stormwater Management Targets

Stormwater management requirements for the proposed alternative Stormwater management scheme have been adopted from the ***Jock River SWS***, ***City Standards***, and the ***MECP SWMP Manual***.

Given the general criteria mentioned above, the following specific standards are anticipated for stormwater management within the subject property:

- Enhanced quality treatment will be provided for stormwater runoff from the subject property, corresponding to a long-term average TSS removal efficiency of 80%, as defined by the MECP prescribed treatment levels;
- Downstream receiving watercourses will be assessed for responses to planned stormwater management outflows, and stabilization mitigation measures will be planned as required;
- Storm sewers on local roads are to be designed to provide at least a 2-year level of service without any ponding per the City's latest Technical Bulletin PIEDTB-2016-01;
- Storm sewers on collector roads are to be designed to provide at least a 5-year level of service without any ponding per the City's latest Technical Bulletin PIEDTB-2016-01;
- For less frequent storms (i.e. larger than 2-year or 5-year), the minor system sewer capture will be restricted with the use of inlet control devices to prevent excessive hydraulic surcharges;
- Under full flow conditions, the allowable velocity in storm sewers is to be no less than 0.80 m/s and no greater than 6.0 m/s;
- For the 100-year storm and for all roads, the maximum depth of water (static and/or dynamic) on streets, rear yards, public space and parking areas shall not exceed 0.35 m at the gutter;
- The major system shall be designed with sufficient capacity to allow the excess runoff of a 100-year storm to be conveyed within the public ROW, or adjacent to the ROW, provided the water level does not touch any part of the building envelope; must remain below all building openings during the stress test event

(100-year + 20%); and must maintain 15 cm vertical clearance between spill elevation on the street and the ground elevation at the nearest building envelope;

- Flow across road intersections shall not be permitted for minor storms (generally 5-year or less);
- When catchbasins are installed in rear yards, safe overland flow routes are to be provided to allow the release of excess flows from such areas. A minimum of 30 cm of vertical clearance is required between the rear yard spill elevation and the ground elevation at the adjacent building envelope; and
- The product of the maximum flow depths on streets and maximum flow velocity must be less than 0.60 m^2/s on all roads.

5.2.2 Quality Control

Per the ***Jock River SWS,*** Enhanced quality treatment will be provided for stormwater runoff from the subject property, corresponding to a long-term average TSS removal efficiency of 80%, as described by the MECP prescribed treatment levels. See Section 5.3 for quality control approach and discussion.

5.2.3 Quantity Control

As noted in the ***Jock River SWS***, quantity control is not anticipated to be required for outlets to the Jock River, however, some quantity control may be provided by erosion storage, as erosion thresholds for any watercourses/outlets will be respected where required. As noted in Section 5.2, JFSA has reviewed the current/future development conditions contributing to this reach of the Jock River and concludes that quantity control will still not be required. See "*Review of Quantity Control Requirement for Jock River Reach 1 (JFSA March 2021)* provided in ***Appendix D***.

5.3 Stormwater Management Design

As shown on ***Drawing 3***, there will be multiple OGS units at various locations along the southern boundary of the property, discharging to the Jock River via naturalized channels. By way of an MECP Certificate of Technology Assessment and manufacturer's design report, the OGS units will demonstrate compliance with Enhanced Level of Protection requirements, with specific drainage area parameters for each area.

The manufacturer's reported efficiency of TSS removal of the OGS units is expected to be based on a 'fine distribution' particle size distribution in conformance with the following table, unless otherwise approved by the City of Ottawa, RVCA, and MECP. The particle size distribution is the generic particle size distribution accepted by the City of Toronto per the *Wet Weather Flow Management Guidelines* (City of Toronto, 2006) as a typical average stormwater particle size distribution, and is an excerpt from Table

3.3 of the *Stormwater Management Practices Planning and Design Manual* (MOECC, 1994).

Table 5: Typical Stormwater Particle Size Distribution & Settling Velocities (Source: *Stormwater Management Practices Planning and Design Manual,* MOECC, 1994)

Particle Size (microns) (NURP 1983)	% of Particle Mass	Average Settling Velocities (m/s)
< 20	0 - 20	0.00000254
20 - 40	20 - 30	0.00001300
40 - 60	30 - 40	0.00002540
60 - 130	40 - 60	0.00012700
130 - 400	60 - 80	0.00059267
400 - 4000	80 - 100	0.00550333

To allow for flexibility as detailed design advances, it is proposed that any OGS unit can be selected, given that it:

- Meets the requirements set out in the preceding sections;
- Ensures no significant negative impact on the upstream storm sewer system – to be determined via hydraulic modelling at detailed design; and
- Demonstrates suitability for meeting Enhanced water quality targets via a MECP Certificate of Technology Assessment.

The preliminary OGS units proposed in the following table have been sized to treat the stormwater runoff for the tributary areas noted in order to meet MECP Enhanced Level of Protection criteria as part of a treatment train approach prior to discharge to the Jock River via naturalized channels as shown on ***Drawing 3***. The OGS total suspended removal rates and preliminary OGS unit details have been attached for reference in ***Appendix D***.

Table 6: OGS Unit ID and Design Characteristics

Area and Unit ID [(1)(2)]	Drainage Area Target (ha)	Estimated Weighted C Value	Unit Treatment Capacity (L/s)	Unit Model [(1)]
Area 1 – OGS W1	8.92	0.65	255	CDS Model 5640-10
Area 2 – OGS W2	8.22	0.65	212	CDS Model 4045-8
Area 3 – OGS W3	9.90	0.65	255	CDS Model 5640-10
Area 4 – OGS W4	8.60	0.65	255	CDS Model 5640-10

(1) Providing at minimum 80% TSS removal (until such time that criteria for the MECP's Consolidated Linear Infrastructure approach is in force at which time only 50% is attributed to OGS units).
(2) See ***Drawing 3*** for OGS unit locations. The "W" prefix in the numbering indicates 'West' development area.

The above preliminary OGS unit sizing will achieve required quality controls and, along with other treatment train elements, will have additional beneficial TSS mitigation.

5.3.1 Groundwater

Paterson Group has reviewed the anticipated long term groundwater condition for the development area. Paterson drawing PG5036-10B in ***Appendix D*** demonstrates the long term groundwater elevation across the Conservancy West development area. The elevations range from ~88.5 m in the southern areas up to ~90 m in the northern areas. The lowest storm outlet at the southern boundary is 89.35 m (OGS W1) and all storm sewers, and any infiltration-type LIDs proposed within the development area, are above the anticipated long term groundwater elevation. Profiles for the storm sewers can be seen in ***Drawing 5***.

5.4 Proposed Minor System

The subject property will be serviced by an internal gravity storm sewer system that is to generally follow the local road network and proposed servicing easements as required. The drainage will be conveyed within the underground piped sewer system to headwall outlets located along the natural heritage corridor, providing hydration to naturalized outlet channels.

Street catchbasins will collect drainage from the streets and front yards, while rear yard catchbasins will capture drainage from backyards. Perforated catch basin leads will be provided in rear yards, except the last segment where they connect to the right-of-way which will be solid pipe, per City standards.

The preliminary rational method design of the minor system captures drainage for storm events up to and including the 2-year (local) and 5-year (collector) event assuming the use of inlet control devices (ICD) for all catchbasins within the subject property. The following table summarizes the standards that will be employed in the detailed design of the storm sewer network. The preliminary drainage area information can be found in ***Drawing 3*** and rational method design sheets are provided in ***Appendix D***.

Table 7: Storm Sewer Design Criteria

Design Parameter	Value
Minor System Design Return Period	1:2 year (PIEDTB-2016-01) for local roads, without ponding 1:5 year (PIEDTB-2016-01) for collector roads, without ponding 1:100 year (PIEDTB-2016-01) for arterial road, without ponding
Major System Design Return Period	1:100 year
Intensity Duration Frequency Curve (IDF) 2-year storm event: A=732.951 | B=6.199 | C=0.810 5-year storm event: A = 998.071 | B = 6.053 | C = 0.814	$i = \frac{A}{(t_c + B)^C}$
Minimum Time of Concentration	10 minutes
Rational Method	$Q = CiA$
Storm sewers are to be sized employing the Manning's Equation	$Q = \frac{1}{n} A R^{2/3} S^{1/2}$
Runoff coefficient for paved and roof areas	0.9
Runoff coefficient for landscaped areas	0.2
Minimum Sewer Size	250 mm diameter
Minimum Manning's 'n' for pipe flow	0.013
Minimum Depth of Cover	1.5 m from crown of sewer to grade
Minimum Full Flowing Velocity	0.8 m/s
Maximum Full Flowing Velocity	6.0 m/s
Clearance from 100-Year Hydraulic Grade Line to Building Opening	0.30 m
Design Parameter	**Value**
Max. Allowable Flow Depth on Municipal Roads	35 cm above gutter (PIEDTB-2016-01)
Extent of Major System	To be contained within the municipal ROW or adjacent to the ROW provided that the water level must not touch any part of the building envelope and must remain below the lowest building opening during the stress test event (100-year + 20%) and 15cm vertical clearance is maintained between spill elevation on the street and the ground elevation at the nearest building envelope (PIEDTB-2016-01)

Stormwater Management Model	DDSWMM (release 2.1), SWMHYMO (v. 5.02) and XPSWMM (v. 10)
Model Parameters	Fo = 76.2 mm/hr, Fc = 13.2 mm/hr, DCAY = 4.14/hr, D.Stor.Imp. = 1.57 mm, D.Stor.Per. = 4.67 mm
Imperviousness	Based on runoff coefficient (C) where Percent Imperviousness = (C - 0.2) / 0.7 x 100%.
Design Storms	Chicago 3-hour Design Storms and 24-hour SCS Type II Design Storms. Maximum intensity averaged over 10 minutes.
Historical Events	July 1st, 1979, August 4th, 1988 and August 8th, 1996
Climate Change Street Test	20% increase in the 100-year, 3-hour Chicago storm
Extracted from City of Ottawa Sewer Design Guidelines, October 2012, and ISSU, and based on recent residential subdivisions in City of Ottawa.	

The peak design flows are calculated based on an average predicted runoff coefficient (C-value) of 0.65 for the development area in keeping with the MIR and will require updating, 0.40 for park areas and 0.25 for grassed areas. As detailed design progresses, the runoff coefficients will be refined to reflect the proposed building envelopes, driveways and other details.

There are several trunk sewers proposed and the peak flows are described for the trunk sewers which correspond to the stormwater management design areas as summarized in the following table:

Table 8: Minor System Trunk Sewer Outlets

Area/Outlet # (from east to west)	Trunk Sewer Outlet Headwall	Peak Flow (L/s)
1 (HW1)	1050 mm diameter @ 0.19%	938
2 (HW2)	975 mm diameter @ 0.20%	744
3 (HW3)	1050 mm diameter @ 0.15%	823
4 (HW4)	825 mm diameter @ 0.55%	823
Note: See rational design sheet in Appendix D for details.		

The storm sewers tributary to the various outlets, and associated peak flows, are detailed in the rational method design sheet, enclosed in ***Appendix D***.

The conceptual servicing layout is shown on ***Drawing 2*** in ***Drawings***. As detailed design progresses, alignment and sizing of local storm sewers will be confirmed and additional servicing easements may be required, potentially triggering minor amendments to the proposed lot fabric in the concept plan. The preliminary sanitary and storm trunk plan and profiles are shown on ***Drawing 5 and 6*** in ***Drawings***.

5.4.1 Hydraulic Grade Line Analysis

A preliminary hydraulic grade line (HGL) modelling analysis has been completed by JFSA to demonstrate that the HGL will be maintained below the ground surface. See the JFSA memo entitled *BCDC Phase 3 – Preliminary HGL Analysis (October 2021)* in ***Appendix D*** for details/results. The analysis has been evaluated for various scenarios for the Jock River in order to assess the appropriate HGL boundary condition:

- 5-year water level in Jock River + 100yr rain event; or
- 100-year water level in Jock River + 5yr rain event (deemed to be the critical event).

The HGL results in JFSA's Table 1 (***Appendix D***) demonstrate that the freeboard to the ground surface ranges from 0.07 m to 1.08 m (with an average of 0.62 m) for the critical event noted above.

An updated HGL analysis will be completed for the proposed system at the detailed design stage, based on the above noted events, including historical design storms and climate change stress test as required. Detailed grading design and storm sewer design will be modified as required to achieve the freeboard requirements set out per PIEDTB-2016-01.

5.5 Proposed Major System

Major system conveyance, or overland flow, will be provided to accommodate flows in excess of the minor system capacity. Overland flow is accommodated by generally storing stormwater up to the 100-year design event in road sags then routing additional surface flow along the road network and service easements towards the proposed stormwater outlets, discharging to the Jock River through the natural heritage corridors, as shown on ***Drawing 1***. The grading design includes a saw-toothed-road design with 0.10% minimum grade from high point to high point in order to maximize available surface storage for management of flows up to the 100-year design event where possible.

5.6 Foundation Drainage (Sump Pumps)

Due to the grade raise restrictions and the proposed storm and sanitary drainage schemes, the road centerlines do not allow for standard basements with a gravity connection to the storm sewer system. As such, because of the constraints on the subject property, sump pumps are proposed to be installed for all residential blocks and residential lots.

The City of Ottawa issued Technical Bulletin *ISTB-2018-04* and *2019-02* for the amendment of the *Ottawa Design Guidelines – Sewer, Second Edition,* October 2012 with respect to the screening criteria for the use of sump pump systems for foundation drainage in Greenfield developments on sites with clay soils. Similar to the development of Conservancy Phase 1 and the Conservancy East (Phase 2) site, ***Conservancy West*** has also been assessed as meeting the required criteria for the use of sump pumps.
One of the screening criterion is with respect to the hydraulic grade line (HGL) for the development wherein the system should be reviewed to demonstrate that the HGL cannot reasonably be lowered any further due to outlet restrictions. The site grading is constrained by the close proximity of the Jock River, which is the receiver of stormwater outflows, and is also constrained by grade raise restrictions for the property.

For the Barrhaven ***Conservancy West*** Lands the grade raise restriction varies between 1.2 m and 1.8 m. Paterson's permissible grade raise plan is contained in ***Appendix E*** for reference (See Section 6 for discussion). Further investigations on the property and potential surcharging or lightweight fill (LWF) underneath garages could increase the permissible grade raise and will be investigated further as part of the detailed design.

The functional grading plan for the subdivision has been prepared with the grade raise restrictions in mind with grades being kept as low as possible.

The proposed centerline of road grades, and subsequently the house grades, do not allow for standard basements with a gravity connection to the storm sewer system. As such, the subdivision will be serviced entirely by sump pumps due to site constraints imposed by grade raise restrictions, HGL elevations and the proximity to the Jock River stormwater outlet.

5.7 Low Impact Development (LID) - Infiltration

The following general Low Impact Development (LID) techniques could be considered for implementation, where possible, as part of detailed design (noting that they have to be weighed against the objectives of the City's sump pump technical bulletins):

- Rear-yard swales should be designed with minimum grades where possible, to promote infiltration;
- Rear-yard catchbasin leads should be perforated (except for the last segment connecting to the storm sewer within the ROW), to promote infiltration; and,
- Where eavestroughs are provided on residential units, they are to be directed to landscaped surfaces, to promote infiltration.
- Furthermore, the following techniques can be examined as part of detailed landscaping design of the park block; and,
- Micro-grading can be considered to promote infiltration.

Generally, the development area is not as strong a candidate for LID techniques beyond those proposed above due to the existing clay soils and high groundwater levels. The long term groundwater anticipated is demonstrated on Paterson Drawing *PG5036-10B* in ***Appendix D*** as previously noted. The infiltration measure noted in Section 5.2 will contribute some infiltration and quality benefits as first flush stormwater is conveyed into the filtration trench. The amount of infiltration is dependent upon the surrounding soils, but the proposed design will optimize the potential on the site. JFSA has completed a high level water budget review of the site which is provided in ***Appendix D*** for reference.

To assess the water budget for the site under both pre- and post-development conditions, a SWMHYMO model was developed. This model was run using 36 years of hourly rainfall data from the Ottawa International Airport from 1967 to 2003 (excluding missing 2001 rainfall data), the average annual runoff volumes from the subject site were computed and compared. The conceptual LIDs have been included in the model through the use of ROUTE RESERVOIR commands, which represent the storage volume and infiltration rates of each of these proposed LID features. After running each of the models for the 36 years, the annual runoff and infiltration results were extracted and the annual average water budget for each scenario calculated. Full summary tables for each year and scenario have been provided in Table A1 in ***Appendix D***.

The analysis concludes that with the proposed LID the existing annual water infiltration volume can be met and exceeded. The extents of the LID system can be refined at detailed design to optimize LID locations and to minimize the extent of infrastructure to be maintained.

5.7.1 Water Quality Benefits

In terms of quality benefits, if it is required that the LID were to achieve a TSS removal of 60% (for the overall treatment train to achieve the 80% TSS removal), the Table 3.2 of the MOECC (now MECP) publication entitled "*Stormwater Management Planning and Design Manual, March 2003*" sets the storage volume requirements for infiltration measures to achieve certain TSS removal rates as follows:

Table 3.2 Water Quality Storage Requirements based on Receiving Waters[1, 2]

Protection Level	SWMP Type	Storage Volume (m^3/ha) for Impervious Level			
		35%	55%	70%	85%
Enhanced 80% long-term S.S. removal	Infiltration	25	30	35	40
	Wetlands	80	105	120	140
	Hybrid Wet Pond/Wetland	110	150	175	195
	Wet Pond	140	190	225	250
Normal 70% long-term S.S. removal	Infiltration	20	20	25	30
	Wetlands	60	70	80	90
	Hybrid Wet Pond/Wetland	75	90	105	120
	Wet Pond	90	110	130	150
Basic 60% long-term S.S. removal	Infiltration	20	20	20	20
	Wetlands	60	60	60	60
	Hybrid Wet Pond/Wetland	60	70	75	80
	Wet Pond	60	75	85	95
	Dry Pond (Continuous Flow)	90	150	200	240

[1]Table 3.2 does not include every available SWMP type. Any SWMP type that can be demonstrated to the approval agencies to meet the required long-term suspended solids removal for the selected protection levels under the conditions of the site is acceptable for water quality objectives. The sizing for these SWMP types is to be determined based on performance results that have been peer-reviewed. The designer and those who review the design should be fully aware of the assumptions and sampling methodologies used in formulating performance predictions and their implications for the design.

[2]Hybrid Wet Pond/Wetland systems have 50-60% of their permanent pool volume in deeper portions of the facility (e.g., forebay, wet pond).

The required storage volume of 20 m^3/ha for the site is not dependent upon the average imperviousness anticipated for the site based on the above table. The site area for Conservancy West (not including parks) is ~32.1 ha. This equates to a storage volume requirement of ~640 m^3 to achieve the required 60% TSS removal.

With the infiltration LID concept at catchbasins (see Figure 5) a configuration of 15m long, 250mm diameter perforated storage pipes off each side of catchbasin locations with a clear stone surround will provide the required storage for the development area.

This is estimated based on the following rationale:

(i) The proposed draft plan has approximately 7,200 lineal meters of roadway;

(ii) Assuming a set of catchbasins approximately every 80m = 7,200/80 = ~90 sets of catchbasins;

(iii) Each set of catchbasins equates to 2 CBs x 30m (perforated 250mm pipe at each CB) x 0.05 m^3/m = 3.0m^3 per set of catchbasins;

(iv) Total volume is approximately 90 CB sets x 3.0m^3/set = **~270 m^3** of provided storage in pipes;

(v) Storage in the granular trench is based on a 1.25m x 0.4m clear stone trench (void ratio of 0.4). Accounting for the exclusion of the pipe this equates to [(1.25x0.4)-(0.05)] x (90x2x30) x 0.4 = **~970 m^3**

(vi) Provided storage of **~1,240m^3** > required storage of 640m^3. At detailed design the system will be fine-tuned to optimize the extent of infrastructure to be installed to meet the required storage targets.

5.8 Existing Watercourses

5.8.1 Foster Ditch

The Foster Ditch borders the eastern boundary of the ***Conservancy West*** development area. It originates south of Fallowfield Road, west of Cedarview Road and flows south until it converges with the Jock River south of McKenna Casey Drive. The ditch is approximately 3,200 m long and has been artificially straightened. This non-municipal drain is a fish bearing tributary of the Jock River with approximately 335 ha of catchment area. The surrounding land use is urban and vacant lands. Riparian vegetation is very sparse consisting of mostly grasses with a few shrubs.

As noted in the ***Jock River SWS***, to ensure protection of the aquatic habitat north of the Jock River, a development setback should be provided for all of the tributaries. Further studies will determine the development setback, which will be the greater of: 1) regulatory floodplain; 2) meander belt width; and 3) aquatic setback, whichever is greater.

5.8.2 O’Keefe Municipal Drain

The O’Keefe Drain is located east of and runs parallel to Highway 416. The drain extends from south of Fallowfield Road and enters the Jock River south of McKenna Casey Drive. The drain is approximately 3,100 m in length and has been artificially straightened through development areas to the north and to follow the depression between agricultural lands through the subject property. The predominant land use is agricultural. The riparian vegetation consists mainly of grasses and some shrubs with thicker forested patches as the reach approaches the Jock River.

As a component of this development application, a process has been initiated with the City’s Municipal Drain Group wherein the O’Keefe Drain is proposed to be realigned around the western perimeter of the subject lands so it does not bisect the development area. A staff report recommending the appointment of Robinson Consultants as the engineer of record for the proposed alteration under Section 78 of the *Drainage Act* was carried by the Agriculture and Rural Affairs Committee (ARAC) on June 3, 2021 and subsequently carried by Council on June 9, 2021 (see recommendation in ***Appendix D*** for reference).

The proposed realignment will see the drain directed westward immediately south of McKenna Casey Drive, then southward along the site boundary to a new outlet connection point to the Jock River. A preliminary meeting has taken place with Robinson Consultants on June 29, 2021 to review the proposal and consultation with the RVCA has taken place on September 22, 2021 as the design work progresses. Once approval of the realignment is advanced there will be an associated application to the RVCA to remove the floodplain designation that exists over the current drain alignment.

5.9 Floodplain

On November 8th 2019 the RCVA gave permission to Barrhaven Conservancy Development Corporation to cut and fill on the subject property under permit RV5 44/19 pursuant to review under Section 28 of the Conservation Authorities Act, regulation 174/06. The application and approval by the RVCA was supported by a 2D HEC-RAS model prepared by JFSA. The JFSA model identified the existing and proposed 100-year water levels and permissible extent of fill placement.

The works pursuant to the above-mentioned permit were completed and accepted by the RVCA on May 31st 2020. Options to complete the fill area boundary as set by JFSA included building a structural face of fill (retaining wall) to the limits of the 100-year floodplain boundary, or, building a berm with the toe of slope at the 100-year floodplain boundary. As-builts for the fill placement were subsequently provided and approved by the RVCA, resulting in the May 31st approval noted above and the current 100-year floodplain boundary delineation. The toe of any material placed corresponds to the approved 100-year floodplain line. As noted in the prior report section an application to remove the floodplain from the existing O'Keefe Drain will be a condition of approval associated with that drain realignment.

5.10 Stormwater Servicing Conclusions

The stormwater runoff is designed to be captured by an internal gravity sewer system that will convey flows to multiple outlet locations equipped with end of line OGS units. A proposed treatment train arrangement of 1.0 m deep sump catchbasins and a catchbasin insert such as CB Shields™ to optimize catchbasin sump retention of solids, as well as select catchbasin locations with connected infiltration-type subdrains will provide the required quality control treatment to achieve the Enhanced Level of protection. Downstream of the storm outlets along the southern development boundary will be naturalized channels where hydration with treated stormwater will occur in the natural heritage corridor prior to discharge to the Jock River. It is anticipated that quantity control is not required for the Jock River. Notwithstanding, some quantity control by means of erosion storage will be included.

A preliminary Hydraulic Grade Line (HGL) modelling analysis has been completed for the ***Conservancy West*** development area at this time and demonstrates that the HGL is maintained below the ground surface with freeboards ranging from 0.07 m to 1.08 m for critical event conditions. Further detailed HGL review will be completed for the proposed system at the detailed design stage. Due to the grade raise restrictions, and the proposed storm and sanitary drainage schemes, the road centerlines do not allow for standard basements with a gravity connection to the storm sewer system. As such, because of the constraints on the subject property, sump pumps are proposed to be installed for all residential blocks and residential lots.

The ***Conservancy West*** development area will be outside of the Jock River's regulatory floodplain area.

Appropriate setbacks from existing watercourse are incorporated into the draft plan based on advancement/finalizing of studies to assess the various determining criteria.

6.0 GRADING

A site grading arrangement has been developed to optimize earthworks and provide major system conveyance to the receiving outlets, and naturalized channels, which ultimately outlet to the existing Jock River drainage network. The proposed grading can be found in ***Drawing 1*** in ***Drawings***.

The development area is outside of the Jock River regulatory flood plain limits. The site grading will be a minimum of 0.50m above the 100-year regulatory limit event of the Jock River.

6.1 Geotechnical Conditions

Paterson completed a geotechnical investigation for the Conservancy West lands as follows:

- Geotechnical Investigation – Proposed Residential Development, Conservancy Lands West (Paterson Group, October 19, 2021);

The existing ground surface across the site is relatively level with approximate ground surface elevation varying between 91 m and 92 m. The subsurface profile generally consists of an approximate 50 mm to 360 mm thick layer of topsoil underlain by a silty clay deposit.

Due to the presence of a silty clay deposit, permissible grade raise restrictions are recommended for this site. The recommended permissible grade raise varies between 1.2 m in the northwest and 1.8 m. Figure PG5036-5 '*Permissible Grade Raise Plan'* by Paterson is enclosed in ***Appendix E*** for reference. At the time of detailed design, efforts will be made to mitigate any exceedances and detailed review and signoff by a licensed Geotechnical Engineer will be required. Where grade raises exceed the permissible levels the Engineer will recommend appropriate measures to mitigate where required (i.e. light weight fill or pre-consolidation etc).

The following additional grading criteria and guidelines will be applied to detailed design, per ***City of Ottawa Guidelines***:

- Driveway slopes will have a maximum slope of 6%;
- Grading in grassed/landscaped areas to range from 2% to 3:1, with terracing required for slopes larger than 7%;
- Swales are to be 0.15m deep with 3:1 side slopes unless otherwise indicated on the drawings; and,
- Perforated pipe will be required for drainage swales if they are less than 1.5% in slope.

The geotechnical analysis of the site, published under separate cover in support of the development applications, provides additional information about the suitability of the site for the proposed services and grading scheme. At the time of detailed design, detailed review and signoff by a licensed Geotechnical Engineer will be required.

7.0 EROSION AND SEDIMENT CONTROL

Soil erosion occurs naturally and is a function of soil type, climate and topography. The extent of erosion losses is exaggerated during construction where vegetation has been removed and the top layer of soil becomes agitated.

Prior to topsoil stripping, earthworks or underground construction, erosion and sediment controls are implemented and will be maintained throughout any construction phase.

The following specific recommendations to the Contractor will be included in contract documents.

- Limit extent of exposed soils at any given time.
- Re-vegetate exposed areas as soon as possible.
- Minimize the area to be cleared and grubbed.
- Protect exposed slopes with plastic or synthetic mulches.
- Install silt fence to prevent sediment from leaving the site and entering existing watercourses, and clean and maintain throughout construction.
- Install catchbasin inserts during construction to protect from silt entering the storm sewer system.
- Install mud mats in order to prevent mud tracking onto adjacent roadways.
- No refueling or cleaning of equipment near existing watercourses.
- No material stockpiles within 30m of existing watercourses, unless otherwise permitted by RVCA and City of Ottawa.
- Provide sediment traps and basins during dewatering.
- Plan construction at proper time to avoid flooding.
- The Contractor will, at every rainfall, complete inspections to ensure proper performance.
- Erosion and sediment controls will remain in place until the working areas have been stabilized and re-vegetated.

8.0 UTILITIES

Utility services extending to the site may require connections to multiple existing infrastructure points: consultation with Enbridge gas, Hydro Ottawa, Rogers, and Bell is required as part of the development process to confirm the servicing plan for the subject lands.

9.0 CONCLUSION AND RECOMMENDATIONS

This AES provides details on the planned on-site municipal services for the subject property and demonstrates that adequate municipal infrastructure capacity is expected to be available for the planned development of the subject property.

- The subject lands have been reviewed by Stantec to confirm that servicing is feasible by City of Ottawa PZ SUC. Several alternatives were presented to confirm that servicing is feasible. The water supply network will be expanded through neighboring properties to meet the water demands of the proposed concept plan, via the trunk watermain network and local watermains identified. Detailed modelling will confirm phasing of the extensions of trunk watermains and sizing of the local watermain network.

- Sanitary service is to be provided to the subject property via the off-site South Nepean Collector (SNC) trunk sanitary sewer. With the inclusion of the subject property, the SNC sanitary sewer will have projected flows that are lower than the previous Phase 2 SNC estimated flows (423.6 L/s at Novatech's Area ID A6-E which was based on old City design criteria) but higher than the flows assessed for the current SNC trunk Phase 3 extension of the SNC sanitary trunk (flow of 313.8 L/s at Area ID A6-E). Since Phase 2 was designed with a higher capacity the SNC can adequately handle the entirety of the subject property's proposed sanitary flows.

- Stormwater service is to be provided by capturing stormwater runoff by an internal gravity sewer system that will convey flows to various outlets along the southern boundary to proposed naturalized channels. Prior to discharge from the development, any first flush stormwater will have passed through an end of line OGS unit for quality control. The OGS units will provide an Enhanced Level of Protection quality control treatment for stormwater in combination with an upstream treatment train of measures such as 1.0 m deep catchbasin sumps CB Shield™ inserts and LID system prior to discharge from the development. It is anticipated that quantity control will not be required for discharges to the Jock River.
- A preliminary Hydraulic Grade Line (HGL) modelling analysis has been completed at this time and demonstrates that the HGL is maintained below the

ground surface. Another detailed HGL review will be completed for the proposed system at the detailed design level.

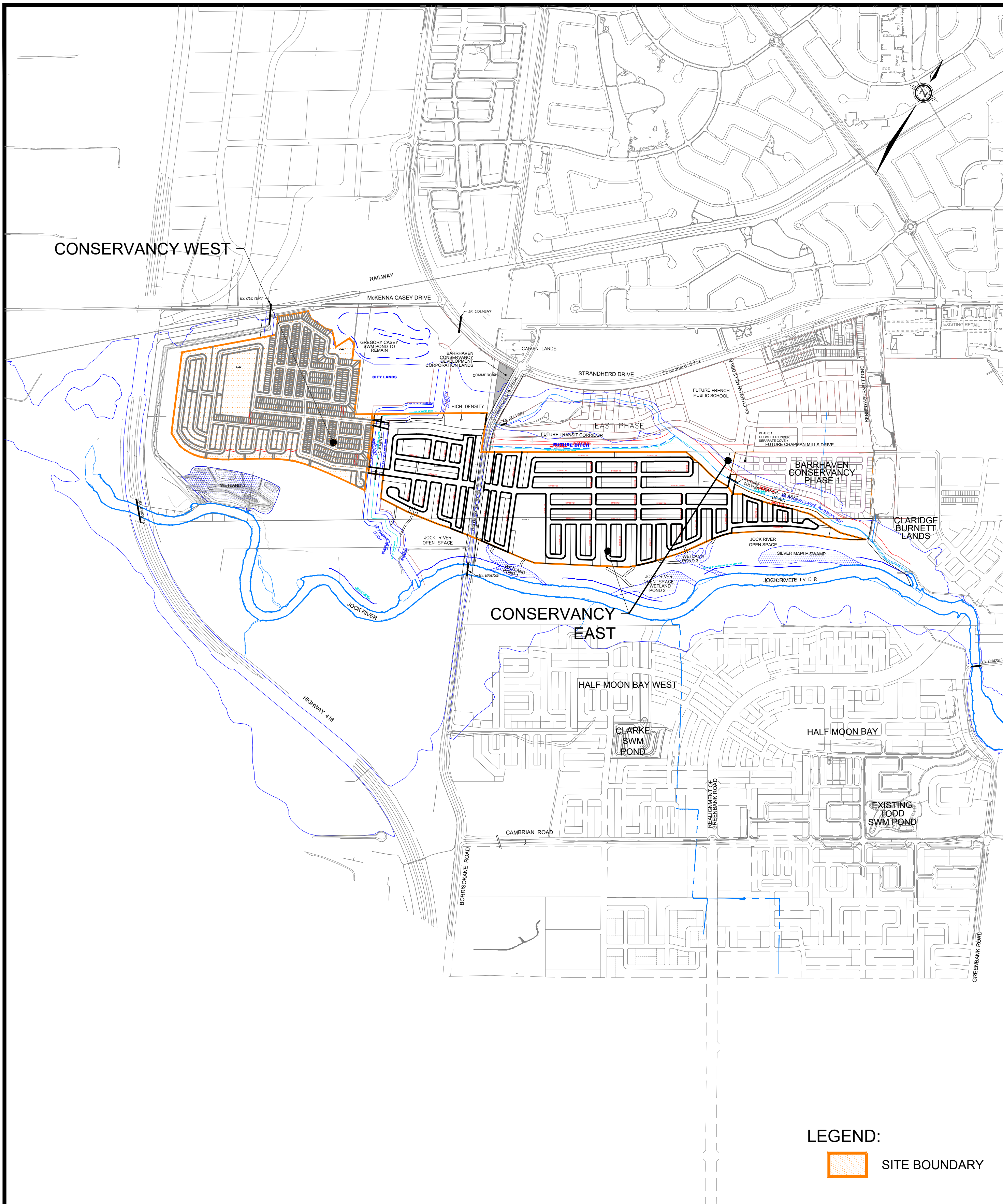
- A preliminary water budget analysis has been completed by JFSA at this time and indicates that pre-development infiltration levels can be met.
- Sump pumps are proposed to be installed for all units within residential blocks and lots;
- The proposed servicing and grading plans are expected to meet all City, RVCA, and MECP requirements as set out in background studies and current standards.
- Prior to detailed design of the infrastructure presented in this report, this AES will require approval under the Planning Act as supporting information for the Plan of Subdivision application. Project-specific approvals are also expected to be required for the infrastructure presented in this report from the City of Ottawa, MECP, and Rideau Valley Conservation Authority, among other agencies.

Prepared by,
David Schaeffer Engineering Ltd.

Per:

20211021_AES_Conservancy West_1st_Subm.doc

FIGURES & DRAWINGS



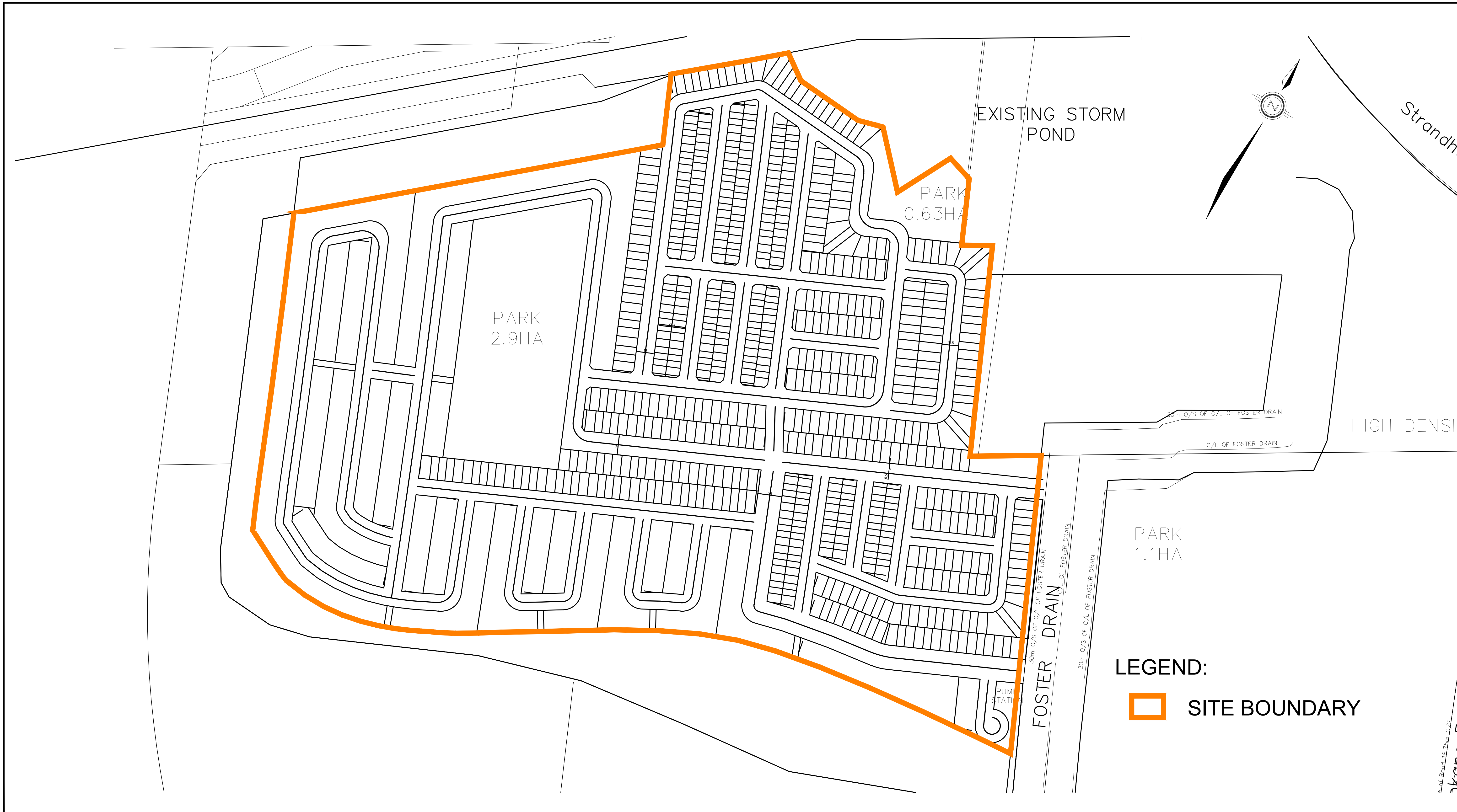
120 Iber Road, Unit 103
Stittsville, ON K2S 1E9
TEL: (613) 836-0856
FAX: (613) 836-7183
www.DSEL.ca

BARRHAVEN CONSERVANCY

KEY PLAN

CITY OF OTTAWA

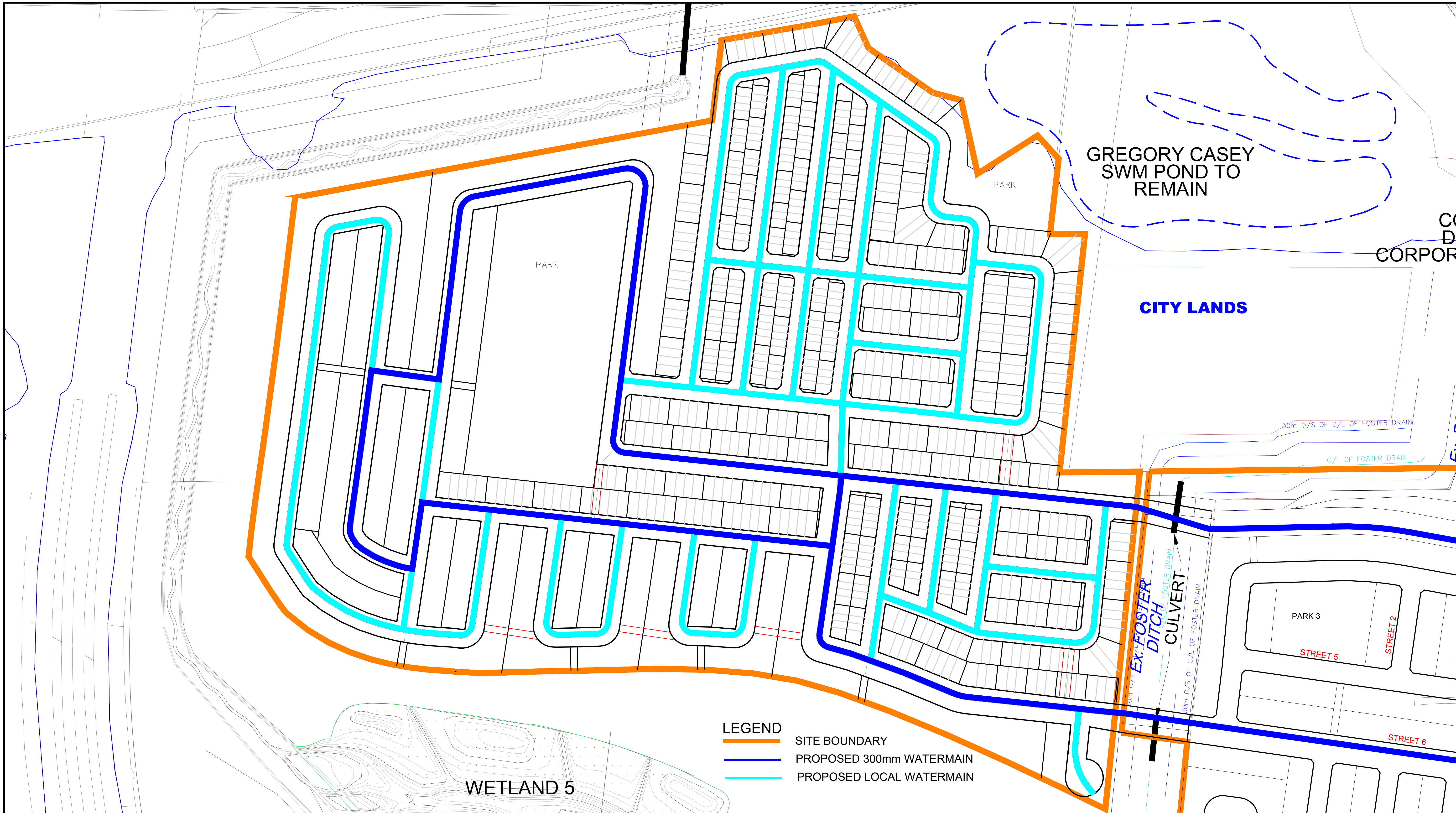
DATE:	OCTOBER 2021
SCALE:	1:20000
PROJECT No.:	20-1226
FIGURE:	1



DSEL
120 Iber Road, Unit 103
Stittsville, ON K2S 1E9
TEL: (613) 836-0856
FAX: (613) 836-7183
www.DSEL.ca

BARRHAVEN CONSERVANCY
SUBDIVISION PLAN
CITY OF OTTAWA

PROJECT No.:	20-1226
SCALE:	NTS
DATE:	OCTOBER 2021
FIGURE:	2

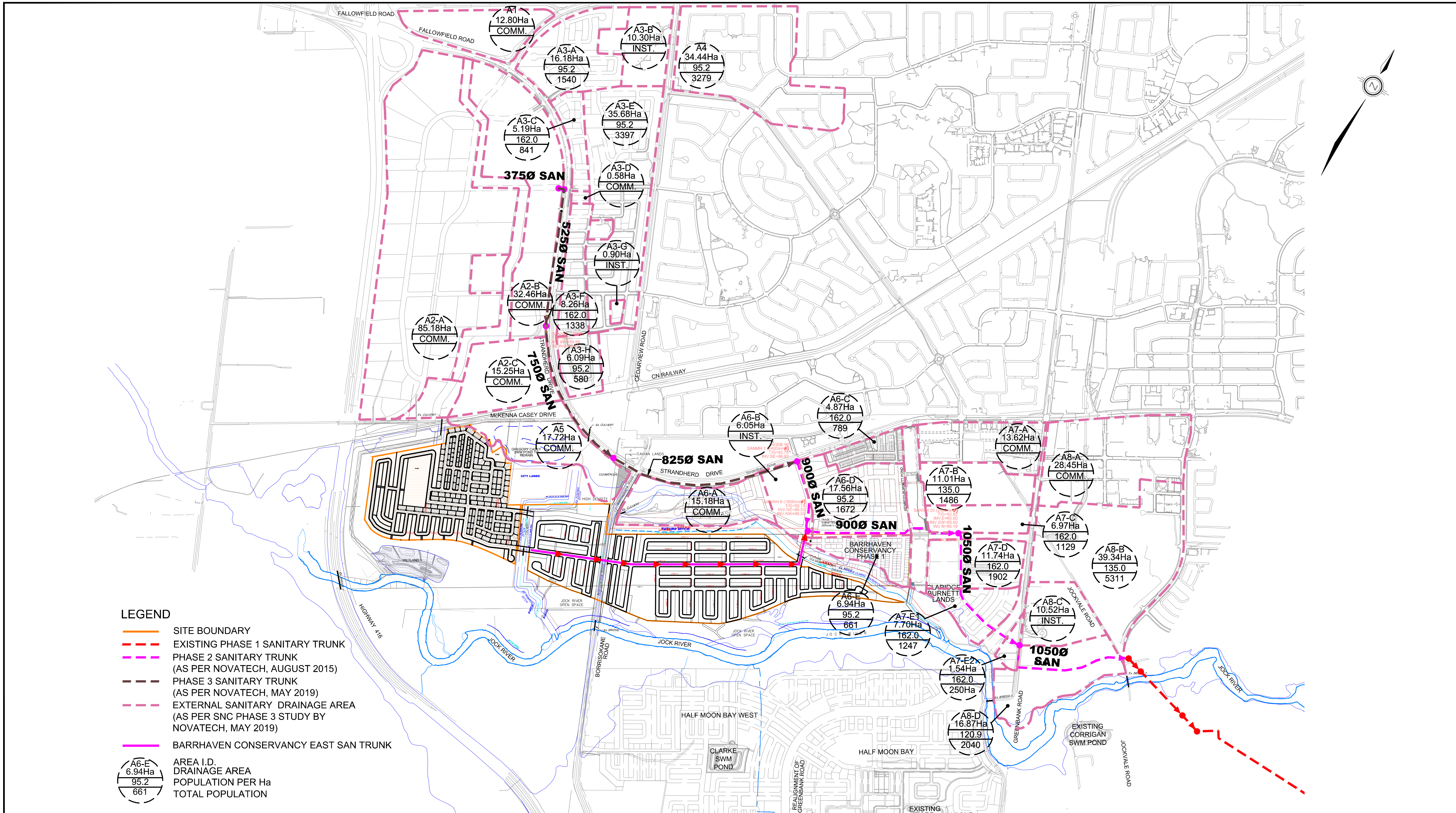


DSEL

120 Iber Road, Unit 103
Stittsville, ON K2S 1E9
TEL: (613) 836-0856
FAX: (613) 836-7183
www.DSEL.ca

BARRHAVEN CONSERVANCY
WATERMAIN SERVICING PLAN
CITY OF OTTAWA

PROJECT No.:	20-1226
SCALE:	1:3000
DATE:	OCTOBER 2021
FIGURE:	3

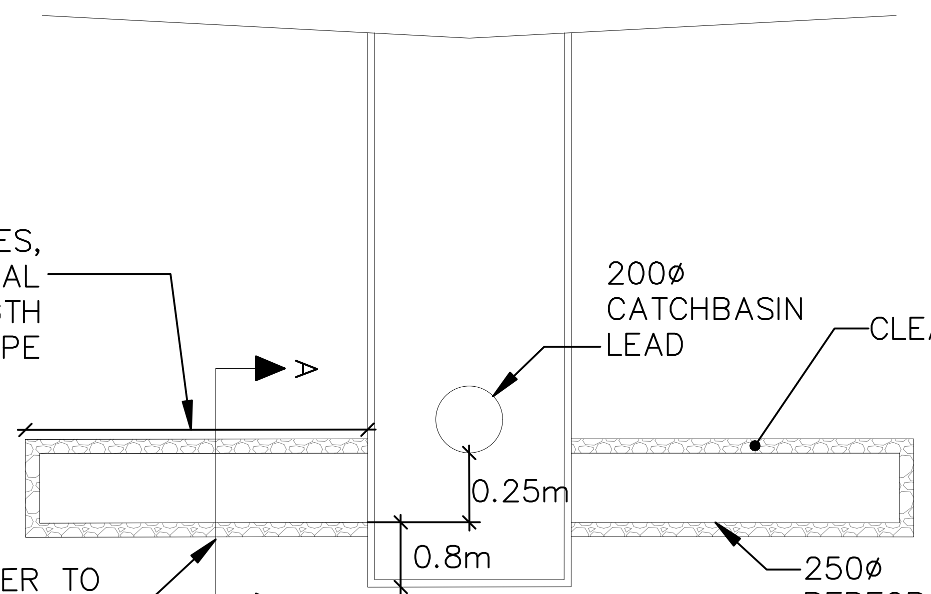


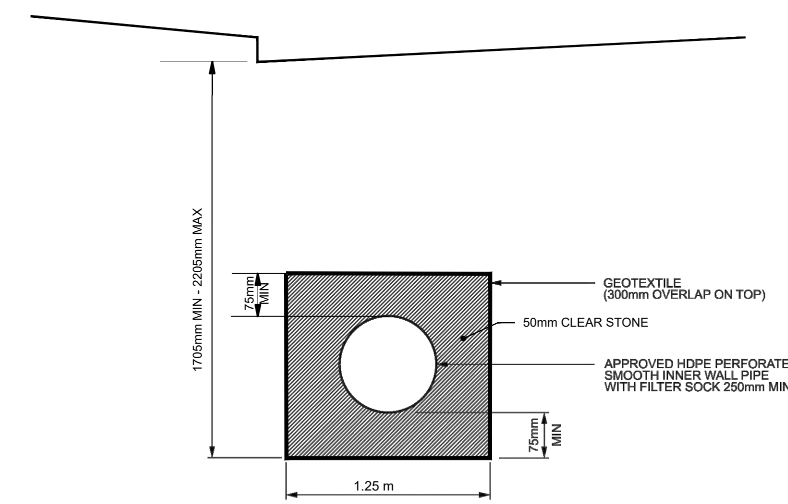
DSEL

120 Iber Road, Unit 103
Stittsville, ON K2S 1E9
TEL: (613) 836-0856
FAX: (613) 836-7183
www.DSEL.ca

BARRHAVEN CONSERVANCY
EXTERNAL SANITARY SERVICING
CITY OF OTTAWA

PROJECT No.:	20-1226
SCALE:	1:18000
DATE:	OCTOBER 2021
FIGURE:	4





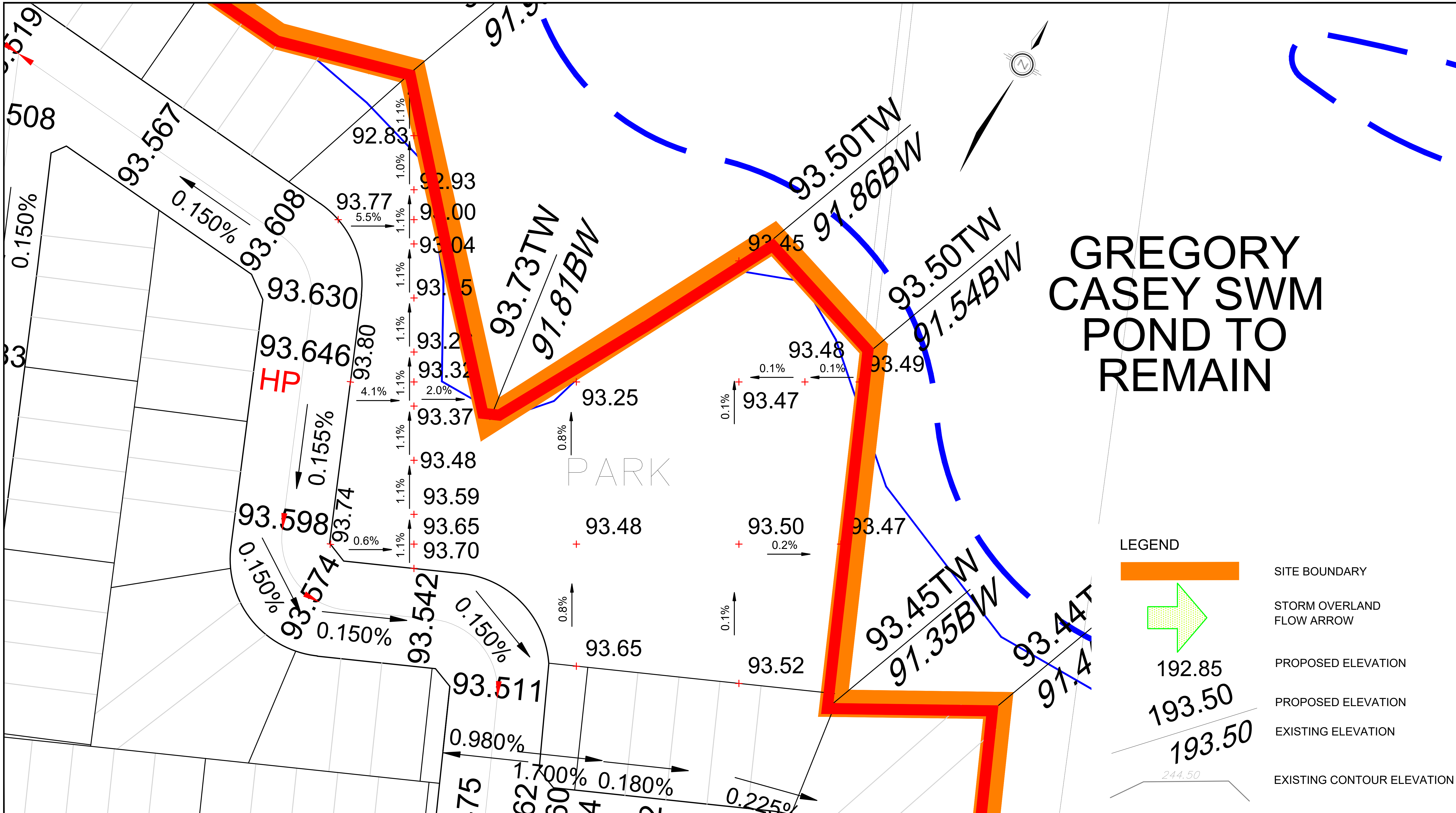
SECTION A–A: MODIFIED CITY STD S29

SCALE: N.T.S.

DSEL
120 Iber Road, Unit 103
Stittsville, ON K2S 1E9
TEL: (613) 836-0856
FAX: (613) 836-7183
www.DSEL.ca

BARRHAVEN CONSERVANCY
FILTRATION SYSTEM DETAILS
CITY OF OTTAWA

PROJECT No.:	20-1226
SCALE:	NTS
DATE:	OCTOBER 2021
FIGURE:	5



DSEL

120 Iber Road, Unit 103
Stittsville, ON K2S 1E9
TEL: (613) 836-0856
FAX: (613) 836-7183
www.DSEL.ca

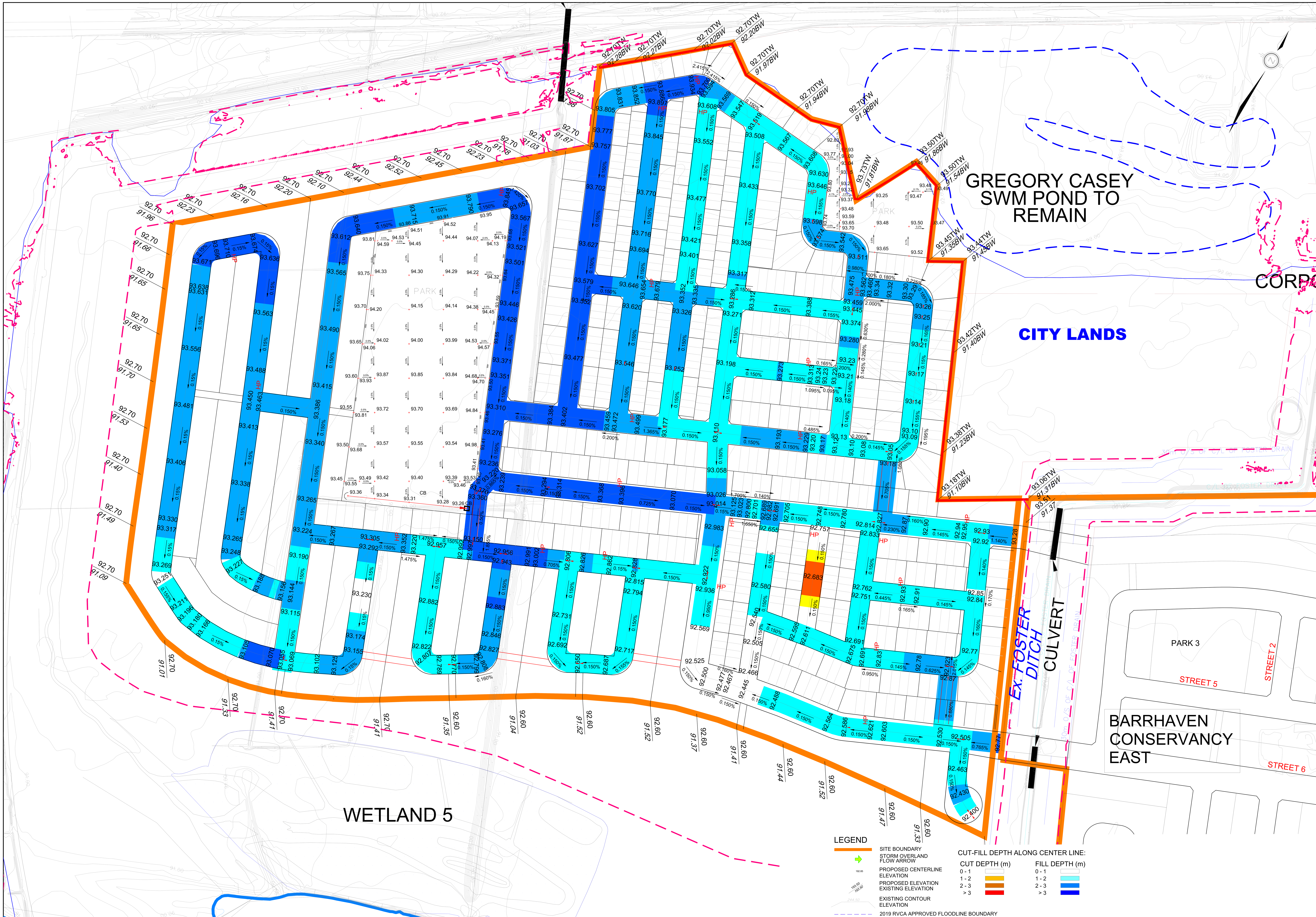
BARRHAVEN CONSERVANCY
CONCEPTUAL PARK 1 GRADING PLAN
CITY OF OTTAWA

PROJECT No.:	20-1226
SCALE:	1:1500
DATE:	OCTOBER 2021
FIGURE:	6

DSEL
120 Iber Road, Unit 103
Stittsville, ON K2S 1E9
TEL: (613) 836-0856
FAX: (613) 836-7183
www.DSEL.ca

BARRHAVEN CONSERVANCY EAST
CONCEPTUAL PARK 2 GRADING PLAN
CITY OF OTTAWA

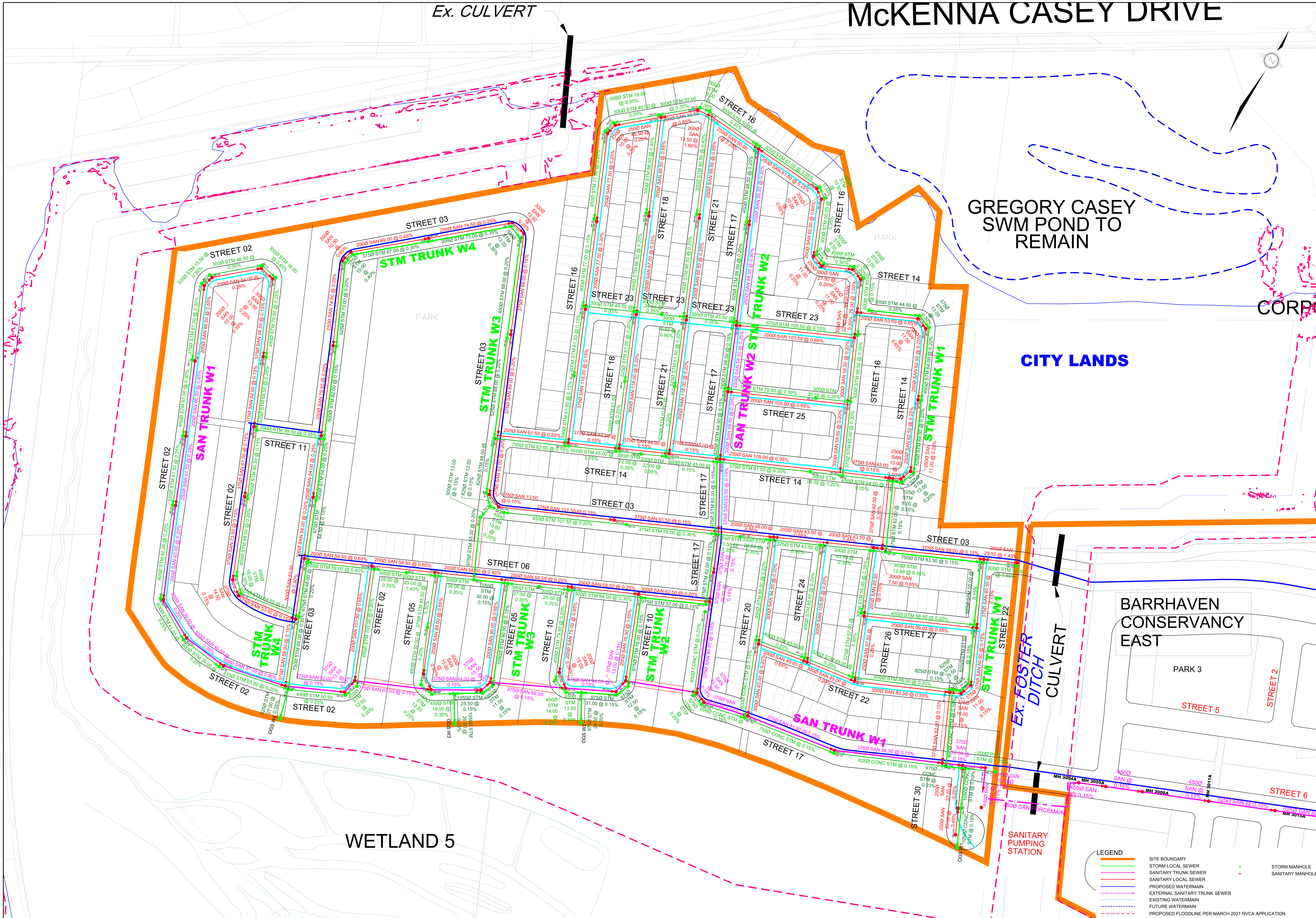
PROJECT No.:	20-1226
SCALE:	1:1000
DATE:	OCTOBER 2021
FIGURE:	7



DSEL
120 Iber Road, Unit 103
Stittsville, ON K2S 1E9
Tel. (613) 836-0856
Fax. (613) 836-7183
www.DSEL.ca

BARRHAVEN CONSERVANCY
CONCEPTUAL GRADING PLAN
CITY OF OTTAWA

PROJECT No. :	20-1226
SCALE:	1:1000
DATE:	OCTOBER 2021
DRAWING No.	1

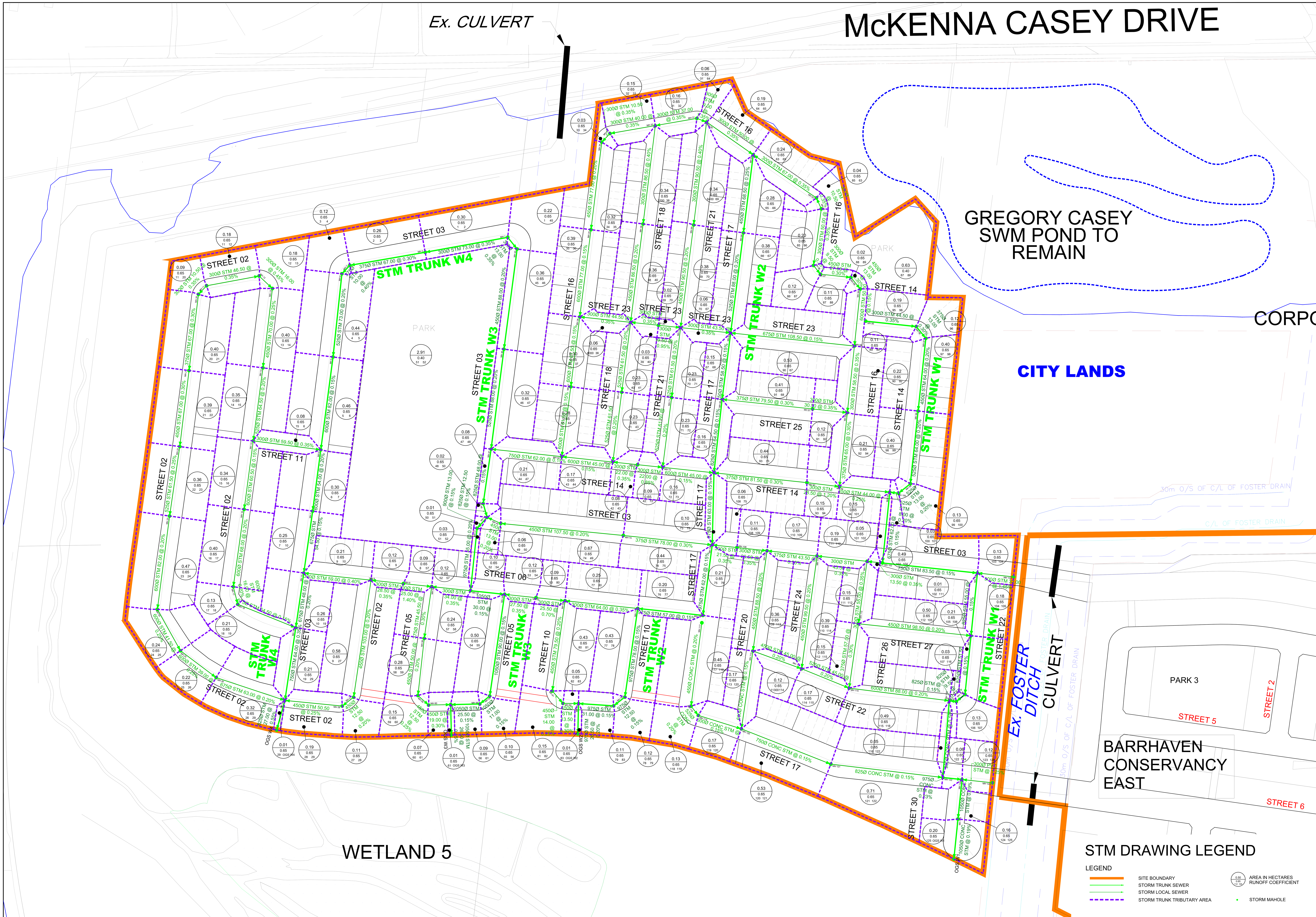


DSEL

120 Iber Road, Unit 103
Stittsville, ON K2S 1E9
Tel. (613) 836-0856
Fax. (613) 836-7183
www.DSEL.ca

BARRHAVEN CONSERVANCY
CONCEPTUAL SERVICING PLAN
CITY OF OTTAWA

PROJECT No. :	20-1226
SCALE:	1:1000
DATE:	OCTOBER 2021
DRAWING No.	2

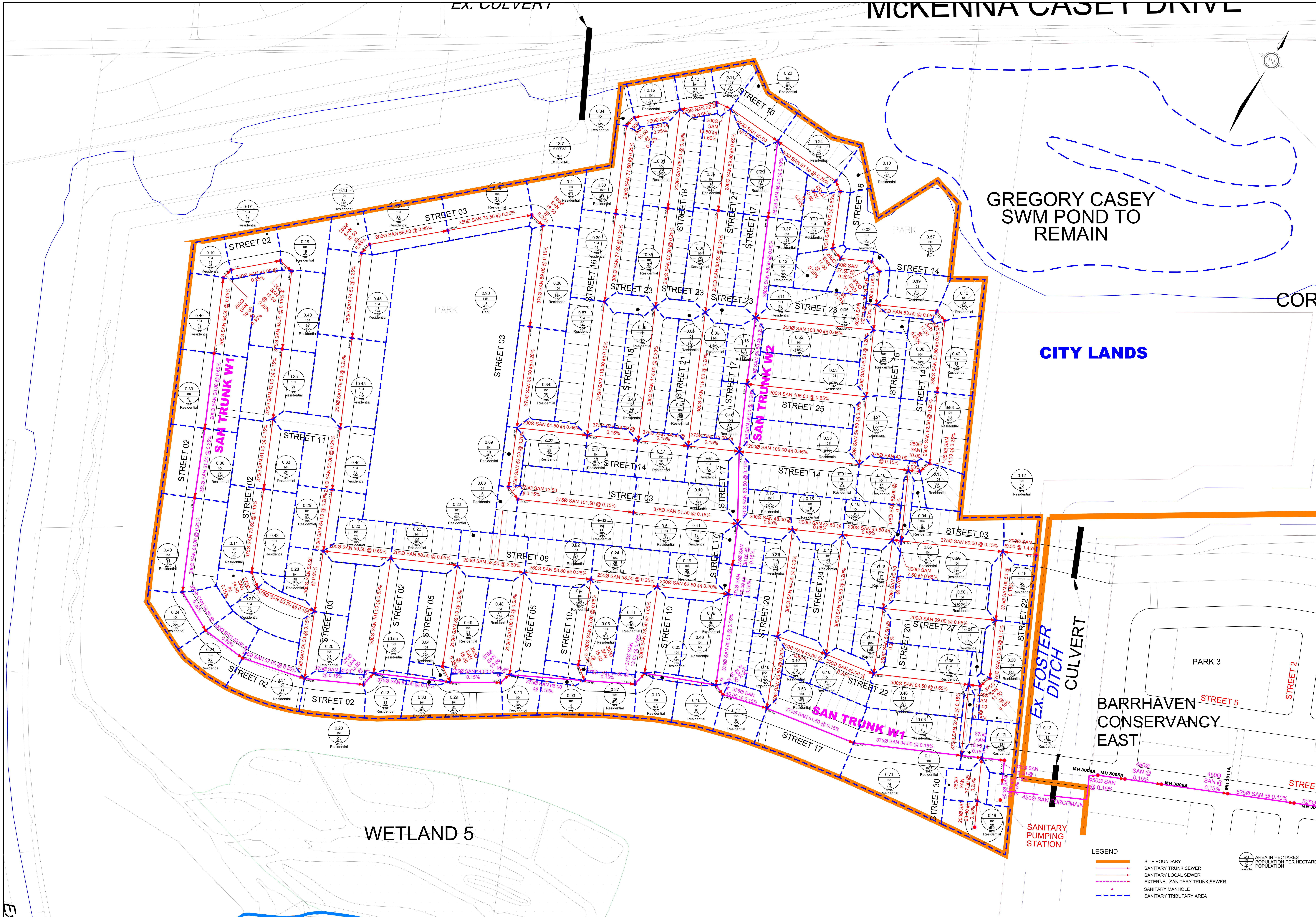


DSEL

120 Iber Road, Unit 103
Stittsville, ON K2S 1E9
Tel. (613) 836-0856
Fax. (613) 836-7183
www.DSEL.ca

BARRHAVEN CONSERVANCY
STORM TRIBUTARY AREA
CITY OF OTTAWA

PROJECT No. :	20-1226
SCALE:	1:1000
DATE:	OCTOBER 2021
DRAWING No.	3

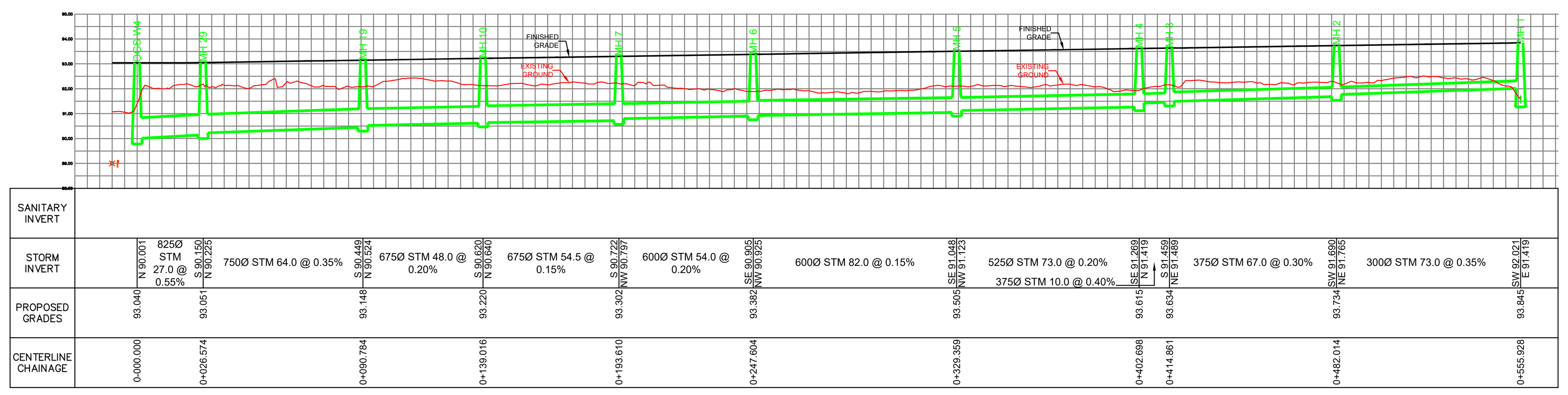


DSEL
120 Iber Road, Unit 103
Stittsville, ON K2S 1E9
Tel. (613) 836-0856
Fax. (613) 836-7183
www.DSEL.ca

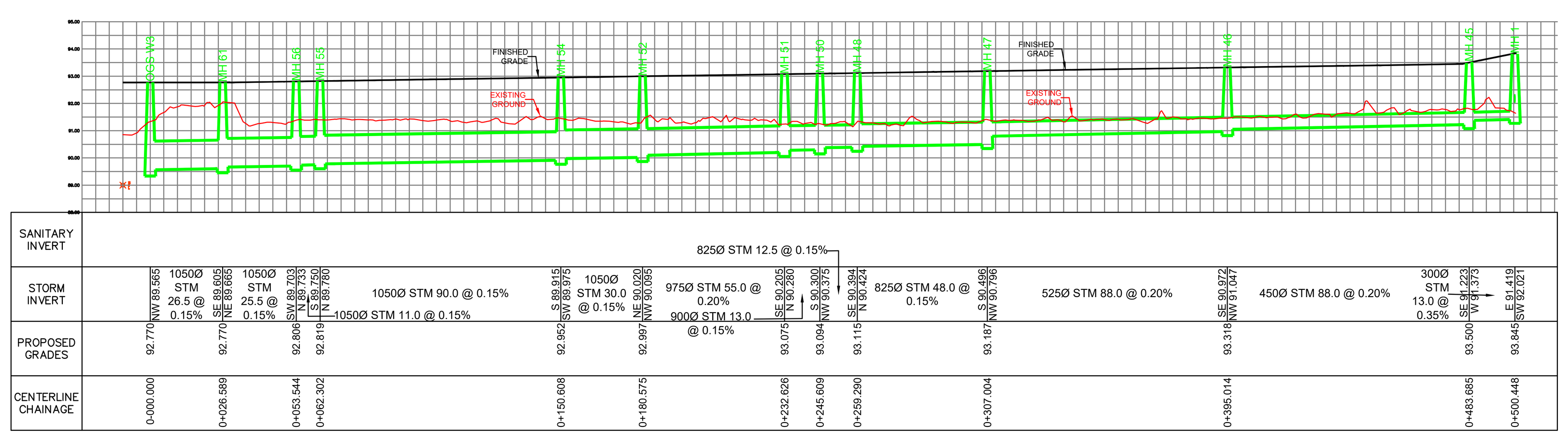
BARRHAVEN CONSERVANCY
SANITARY TRIBUTARY AREA
CITY OF OTTAWA

PROJECT No. :	20-1226
SCALE:	1:1000
DATE:	OCTOBER 2021
DRAWING No.	4

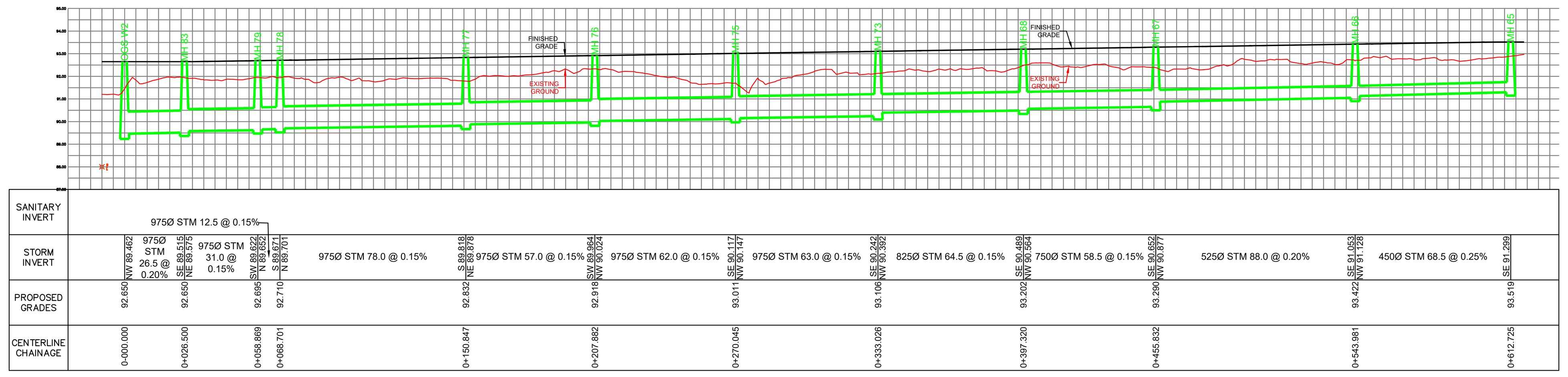
STM TRUNK W4



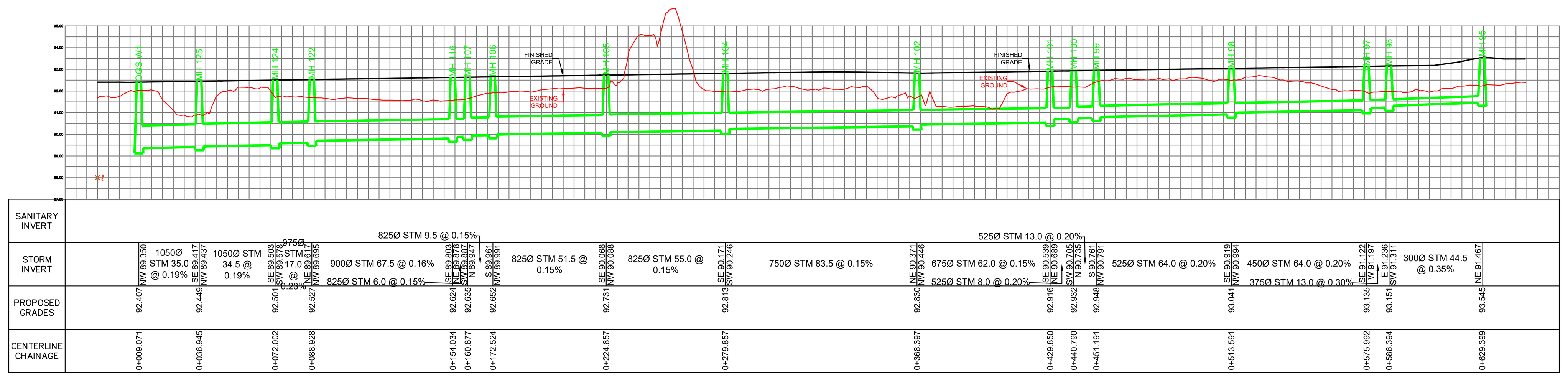
STM TRUNK W3



STM TRUNK W2



STM TRUNK W1

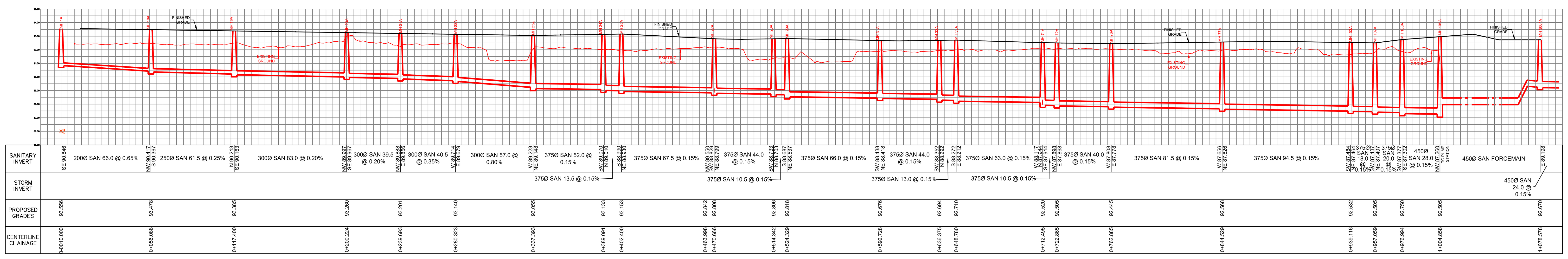


DSEL
120 Iber Road, Unit 103
Stittsville, ON K2S 1E9
Tel. (613) 836-0856
Fax. (613) 836-7183
www.DSEL.ca

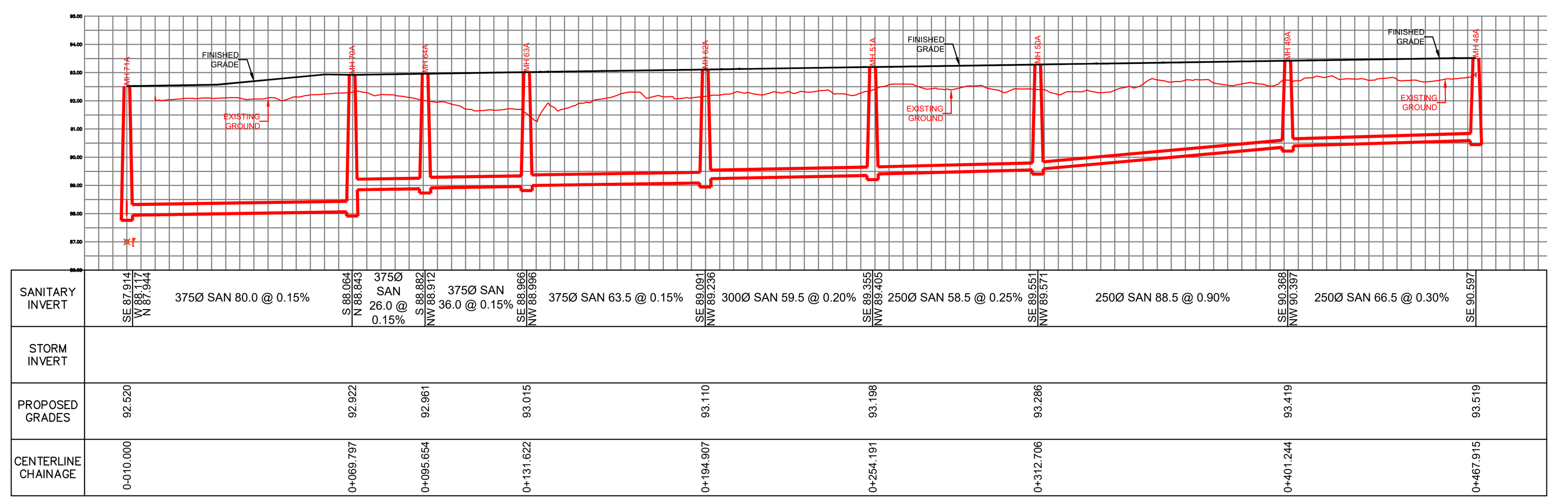
BARRHAVEN CONSERVANCY
STORM TRUNK PROFILES
CITY OF OTTAWA

PROJECT No. :	20-1226
SCALE:	1:1500
DATE:	OCTOBER 2021
DRAWING No.	5

SAN TRUNK W1



SAN TRUNK W2



DSEL
120 Iber Road, Unit 103
Stittsville, ON K2S 1E9
Tel. (613) 836-0856
Fax. (613) 836-7183
www.DSEL.ca

BARRHAVEN CONSERVANCY
SANITARY TRUNK PROFILES
CITY OF OTTAWA

PROJECT No. :	20-1226
SCALE:	1:1500
DATE:	OCTOBER 2021
DRAWING No.	6

APPENDIX A

GENERAL

Content Copy Of Original

Ministry of the Environment and Climate Change
Ministère de l'Environnement et de l'Action en matière de changement climatique

ENVIRONMENTAL COMPLIANCE APPROVAL
NUMBER 8129-AB7LDF
Issue Date: June 23, 2016

City of Ottawa
100 Constellation Cresent West, 6th Floor
Ottawa, Ontario
K2G 6J8

Site Location: Jockvale Road and Strandherd Drive
City of Ottawa, Ontario

You have applied under section 20.2 of Part II.1 of the Environmental Protection Act , R.S.O. 1990, c. E. 19 (Environmental Protection Act) for approval of:

sanitary sewers to be constructed in the City of Ottawa, on various vacant development lands (from Station 0+003 to Station 2+517), Greenbank Road (from Station 1+846 to Station 1+947), and Jockvale Road (from Station 2+430 to Station 2+517);

all in accordance with the application form from the City of Ottawa, dated June 22, 2016, including final plans and specifications prepared by Novatech Engineers, Planners and Landscape Architects.

In accordance with Section 139 of the Environmental Protection Act, you may by written Notice served upon me and the Environmental Review Tribunal within 15 days after receipt of this Notice, require a hearing by the Tribunal. Section 142 of the Environmental Protection Act provides that the Notice requiring the hearing shall state:

1. The portions of the environmental compliance approval or each term or condition in the environmental compliance approval in respect of which the hearing is required, and;
2. The grounds on which you intend to rely at the hearing in relation to each portion appealed.

The Notice should also include:

3. The name of the appellant;
4. The address of the appellant;
5. The environmental compliance approval number;
6. The date of the environmental compliance approval;
7. The name of the Director, and;
8. The municipality or municipalities within which the project is to be engaged in.

And the Notice should be signed and dated by the appellant.

This Notice must be served upon:

The Secretary***** Environmental Review Tribunal 655 Bay Street, Suite 1500	AND	The Director appointed for the purposes of Part II.1 of the Environmental Protection Act

Toronto, Ontario
M5G 1E5

Ministry of the Environment and Climate Change
135 St. Clair Avenue West, 1st Floor
Toronto, Ontario
M4V 1P5

*** Further information on the Environmental Review Tribunal's requirements for an appeal can be obtained directly from the Tribunal at: Tel: (416) 212-6349, Fax: (416) 326-5370 or www.ert.gov.on.ca**

The above noted activity is approved under s.20.3 of Part II.1 of the Environmental Protection Act.

DATED AT TORONTO this 23rd day of June, 2016

Gregory Zimmer, P.Eng.
Director
appointed for the purposes of Part II.1 of the *Environmental Protection Act*

AF/
c: District Manager, MOECC Ottawa
Water Supervisor, MOECC, Ottawa
M. Rick O'Connor, City Clerk, City of Ottawa
Luc Marineau, City of Ottawa
Jonathan Knoyle, City of Ottawa
Bob Dowdall, Novatech Engineers, Planners and Landscape Architects
Edson Donnelly, Novatech Engineers, Planners and Landscape Architects

APPENDIX B

WATER SUPPLY

Stantec

Memo

To:	Kevin Murphy David Schaeffer Engineering Ltd.	From:	Jasmin Sidhu / Kevin Alemany Stantec Consulting Ltd.
File:	163401437 / 163401660	Date:	March 5, 2021

Reference: Hydraulic Potable Water Assessment for Barrhaven Conservancy Development Corporation

OVERVIEW

Stantec Consulting Ltd. (Stantec) was retained by Barrhaven Conservancy Development Corporation to perform a hydraulic assessment for a land parcel located adjacent to Pressure Zone (PZ) 3SW (previously known as PZ BARR). This technical memo reviews and assesses the limitations/opportunities associated with servicing the parcel in question as it is located near the Jock River. The parcel in question, which is divided into east (Conservancy East) and west (Conservancy West) portions, is herein referred to as the Barrhaven Conservancy Lands.

BACKGROUND REVIEW

As part of the assessment, the following reports were reviewed:

- City of Ottawa 2013 Water Master Plan, Stantec Consulting Ltd., September 2013;
- Kennedy-Burnett Potable Water Master Servicing Study, Stantec Consulting Ltd., April 2014;
- SUC Water Infrastructures Upgrades – Hydraulic Assessment, Stantec Consulting Ltd., July 2015; and,
- Barrhaven Master Servicing Study Addendum – Revised Potable Water and Sanitary Servicing Analysis for the Barrhaven South Urban Expansion Area, Stantec Consulting Ltd., March 2017.

ZONE 3SW AND ZONE SUC

ZONAL WATER DEMANDS & POPULATION PROJECTIONS

Zone 3SW services the lands adjacent to the proposed Barrhaven Conservancy Lands development. In 2015, the City embarked on a large initiative to reconfigure the pressure zones servicing Barrhaven and the southern reaches of Ottawa, and area called the South Urban Community (SUC). The purpose of the zone reconfiguration was to improve reliability, to improve efficiencies and to provide increased pumping capacity for future growth.

Table 1 shows the projected water demands and **Table 2** shows the projected populations of Zone 3SW and Zone SUC before and after the pressure zone reconfiguration. These values were adapted from the City of Ottawa 2013 Water Master Plan (Stantec, 2013) and the SUC Water Infrastructure Upgrades – Hydraulic Assessment (Stantec, 2015) reports.

Reference: **Hydraulic Potable Water Assessment for Barrhaven Conservancy Development Corporation**

Table 1: Water Demand Projections

Zone	Existing Pre-Zone Reconfiguration (MLD)			2018 Post-Zone Reconfiguration (MLD)			2031 Post-Zone Reconfiguration (MLD)			2060 Post-Zone Reconfiguration (MLD)		
	BSDY	MXDY	PKHR	BSDY	MXDY	PKHR	BSDY	MXDY	PKHR	BSDY	MXDY	PKHR
3SW	12.0	26.2	52.3	5.7	11.7	27.0	6.3	12.8	29.5	6.4	12.9	29.8
SUC	3.4	7.3	14.6	24.7	47.6	90.8	44.4	78.7	148.9	63.3	107.6	207.1

Table 2: Population Projections

Zone	Existing Pre-Zone Reconfiguration	2018 Post-Zone Reconfiguration	2031 Post-Zone Reconfiguration	2060 Post-Zone Reconfiguration
3SW	48,917	29,995	30,363	31,183
SUC	5,737	137,909	175,073	234,538

PUMPING CAPACITY

The newly installed pumps for Zone 3SW are sized based on population/demand projections for lands within current approved growth areas. They do not include demands attributed to the Barrhaven Conservancy Lands. As such, the current pumping capacity into Zone 3SW is not sufficient to supply these additional lands along with the growth already planned for in Zone 3SW up to 2060 projections.

The Fallowfield Road Pumping Station (FRPS) (previously known as Barrhaven Reservoir Pumping Station) and Barrhaven Pumping Station (BPS) will continue to service Zone 3SW post pressure zone reconfiguration; however, both pump stations are being equipped with new pumps that were sized for the post pressure zone reconfiguration water demands in Zone 3SW.

The new FRPS is already commissioned and in operation while the BPS is currently undergoing pumping tests on the newly installed pumps as part of its commissioning process.

The BPS is changing from a single zone station to a dual zone pump station and will operate in conjunction with Ottawa South Pumping Station (OSPS) to service the newly expanded Zone SUC. It will also continue to service the smaller/reduced Zone 3SW with one of its pumps.

The Ottawa South Pumping Station is the second pumping station that will feed Zone SUC. It is currently undergoing a detailed design for its upgrade. It may be possible to make some provisions to account for the additional demands in SUC however it is recommended that this be considered as soon as possible through discussions with the City.

Table 3 provides the pumping capacities into each pressure zone post zone reconfiguration upgrades.

Table 3: Pumping Capacity Post-Zone Reconfiguration

Zone	Firm Pumping Capacity (MLD)	Total Pumping Capacity (MLD)
3SW	14	21
SUC	113	173

Due to the elevated balancing storage provided by Moodie Tank, the firm capacity of the 3SW pumps must be able to supply the future 2060 maximum day demand of 12.9 MLD as shown in **Table 1**. The 3SW pumps were sized based on 2060 demands as they do not increase significantly compared to 2018 post zone reconfiguration demands.

In Zone SUC, without elevated storage, the firm capacity of the pumps must be able to supply the greater demand of peak hour (90.8 MLD) or maximum day plus fire flow (66.3 MLD; FF = 18.7 MLD) for post zone reconfiguration demands. It should be noted that pumping capacity at the SUC pump stations will be further increased in the future to meet 2031 and 2060 projected demands.

The above shows that both the 3SW and SUC pumps have been sized to meet the existing and future demands within the previously established growth areas. For the purpose of this assessment, it is assumed that the demand for the Barrhaven Conservancy Lands is not accounted for in the current capacity of the Zone 3SW pumps but can be accommodated by the SUC pumps. The impact on district-level distribution pumping and needs will be further reviewed as part of the City's 2021 Water Master Plan.

HYDRAULIC ASSESSMENT

WATER DEMANDS

Following the 2013 Water Master Plan "Design Criteria and Levels of Service", when projected population exceeds 3,000 persons, basic unit demands for Zone/System Levels are to be used. For residential land-uses, single family and semi-detached homes were considered to have similar demands, with both types of residential home categorized under "single family home" or SFH. All townhomes were categorized under "multi-level townhomes" or MLT and all apartments or high-density units were categorized under APT. Consumption rates for SFH, MLT and APT are presented in **Table 4**.

To determine the MXDY demand, an outdoor water demand (OWD) of 1,049 L/SFH/d is allocated to all SFH units. This is a fixed value and does not change with zone demand. This outdoor water demand is added to the basic day (BSDY) demand to obtain the MXDY demand.

The unit counts were provided by David Schaeffer Engineering Ltd. (DSEL) via email on March 1, 2021. The estimated water demands are presented in **Table 4**. This additional demand is not within the current capacity of the new pumps within Zone 3SW.

Table 4: Estimated Water Demands of the Barrhaven Conservancy Lands

Unit Types	Unit Count			PPU	Pop.	L/c/d	BSDY (MLD)	MXDY (MLD)
	Conservancy East	Conservancy West	Total					
Single Family	730	775	1,505	3.4	5,117	180	0.92	2.50
Townhouse	445	525	970	2.7	2,619	198	0.52	0.52
Rear-Lane Townhouse	165	-	165	2.7	446	198	0.09	0.09
High Density	100	-	100	2.1	210	219	0.05	0.05
Total	***1,440***	***1,300***	***2,740***		***8,392***		***1.57***	***3.15***

POTABLE WATER SERVICING ALTERNATIVES

Figures 1 to **6** and **Table 5** present alternatives to service the Barrhaven Conservancy Lands with potable water and discusses limitations of each alternative. For system reliability purposes, primary and secondary feeds have been identified for each alternative. It should be noted that the alignments shown in **Figures 1** to **6** are approximate with the intent to show general locations for possible connections.

Based on hydraulic modelling of trunk main looping through the Conservancy Lands and review of previously completed servicing studies for adjacent lands, all alternatives are anticipated to satisfy the City's objective minimum pressure of 40 psi during peak hour demand and achieve a typical planning level fire flow value 13,000 L/min or greater. These results are discussed further in the following sections. Detailed modelling results are provided in the **Hydraulic Modelling Results** attachment.

Alternative 1 – Servicing from 3SW

Figure 1 shows the connection points to the Kennedy-Burnett watermains that are fed by the future Strandherd Drive watermain.

Based on the Kennedy-Burnett Potable Water Master Servicing Study (Stantec, 2014), which is a subdivision adjacent to the Barrhaven Conservancy Lands, it is likely the Barrhaven Conservancy Lands will experience pressures greater than the City of Ottawa's objective pressure of 80 psi during basic day demands if operating at Zone 3SW pressure. This is corroborated by hydraulic modelling results which show the maximum pressure along the trunk main looping through the Conservancy Lands under basic day demands to be approximately 88 psi. Therefore, pressure mitigation measures would need to be considered (i.e., pressure reducing valves (PRVs) at individual service connections) for this servicing alternative.

Pumping capacity upgrades at FRPS and/or BPS would be required to service the Barrhaven Conservancy Lands from Zone 3SW on a permanent basis. As an example of costs, recent upgrades to the FRPS totaled approximately $1.5 million. Additional works at FRPS and BPS to service the Conservancy Lands could include retrofitting the pump(s), piping, valving and supporting infrastructures as well as instrumentation, electrical and mechanical aspects. A more in-depth assessment would be required to determine the potential costs.

Another alternative to service the Barrhaven Conservancy Lands from Zone 3SW would be on a temporary basis. As shown in **Figure 1**, the initial phase of development (estimated boundary shown) could be serviced at 3SW pressure and switched over to SUC pressure at a later time as development takes place. While this alternative is likely to be technically feasible, the extent of development within the Barrhaven Conservancy Lands that can operate at 3SW pressure in the interim will depend on the City's planning and approvals currently in place. This alternative essentially borrows capacity from existing approved areas within Zone 3SW until such time that the borrowed capacity is replaced through system upgrades. Through discussions with City staff, the City has indicated that this is not a desirable option.

Alternative 2 – Servicing from SUC

Figures 2 to **5** show the Barrhaven Conservancy Lands being serviced by new SUC watermains and include various options for a secondary feed.

Both Alternatives 2a and 2b propose a new SUC watermain running parallel to the future 3SW Strandherd watermain as the primary feed. This feed would then run south, parallel to the existing watermains that currently service the existing subdivisions north of the Conservancy Lands (including Phase 1 lands) that operate at 3SW pressures. Alternative 2a proposes a secondary feed from Nepean Town Centre (NTC) whereas Alternative 2b proposes a secondary feed from Barrhaven South. Based on findings from the Barrhaven South Urban Expansion Area Master Servicing Study (Stantec, 2017), the Barrhaven Conservancy Lands can anticipate maximum pressures greater than 75 psi and potentially greater than 80 psi during basic day demands if operating at Zone SUC pressure. Hydraulic modelling results indicate that the maximum pressure along the trunk main looping through the Conservancy Lands under basic day demands is estimated to be approximately 76 psi and available fire flow to be in excess of 13,000 L/min for both Alternatives 2a and 2b. Therefore, PRVs would not be required. As these two options would require the installation of a second separate watermain along Strandherd Drive (which will be undergoing widening as part of a separate recently awarded project) and through the existing north subdivision, the City has indicated that these alternatives are not preferred.

Alternative 2c proposes both primary and secondary feeds from the NTC (one along future Chapman Mills Drive and one through the future Claridge development from southeast of the KB pond) to service the first stages of development in the Conservancy Lands. As per currently proposed, site servicing through the Claridge lands, Alternative 2c would connect to a 300 mm diameter watermain along Chapman Mills Drive and a 200 mm watermain southeast of the KB pond. Similar to Alternatives 2a and 2b, hydraulic modelling results show that the maximum pressure along the trunk main looping through the Conservancy Lands under basic day demands is estimated to be approximately 76 psi and available fire flow to be in excess of 13,000 L/min.

Alternative 2d proposes a primary feed through the future Claridge development from southeast of the KB pond and a secondary feed from Barrhaven South. Pressures and available fire flows along the trunk main looping through the Conservancy Lands are similar to those for Alternatives 2a, 2b and 2c.

All four alternatives (2a to 2d) present challenges due to limited land access, crossings of a body of water, and/or requiring a new watermain to be installed along recently or soon to be (re)constructed right-of-ways.

Alternative 3 – Servicing from SUC with an Automated Valve from 3SW

Figure 6 shows the Barrhaven Conservancy Lands being serviced by a new SUC watermain running parallel to the Strandherd Drive watermain and a secondary feed from 3SW for emergency conditions.

This alternative proposes a secondary feed from 3SW via an automated valve off the future Strandherd Drive watermain. Water would flow from the high pressure Zone 3SW into the low pressure Zone SUC if there is a pressure drop on the SUC side of the valve. This alternative requires an interzonal valve connection that is not typically used/accepted in the City of Ottawa and would present both operational challenges and costs to operate and maintain. Similar to Alternatives 2a and 2b, this option would require the installation of a second separate watermain along Strandherd Drive (which will be undergoing widening as part of a separate recently awarded project) and through the existing north subdivision; therefore, the City has indicated that this alternative is not preferred.

Table 5: Potable Water Servicing Alternatives & Limitations

Alternative		Zone	Max Pressures	Min Pressures	Available Fire Flow at 20 psi	Limitations
1	Connect to the future 3SW 406 mm dia. WM along Strandherd Drive at two locations	3SW	88 psi	52 psi	> 13,000 L/min	Requires additional pumping capacity in Zone 3SW. Will require individual PRVs at each service connection. ***Therefore, the City has indicated that this is not a preferred option.***
2a	Connect to a future SUC WM that will run parallel to the future Strandherd WM and connect to a 2nd future SUC WM from the NTC (north of the Jock River)	SUC	76 psi	64 psi	≥ 13,000 L/min	Requires crossing water way east of the Barrhaven Conservancy Lands. Land around ponds may not be accessible. Requires installation of a second separate WM along Strandherd Drive and through the existing north subdivision. ***Therefore, the City has indicated that this is not a preferred option.***
2b	Connect to a future SUC WM that will run parallel to the future Strandherd WM and connect to a 2nd future SUC WM from Barrhaven South (south of the Jock River – crossing river)	SUC	76 psi	61 psi	> 13,000 L/min	Requires crossing the Jock River. Requires installation of a second separate WM along Strandherd Drive and through the existing north subdivision. ***Therefore, the City has indicated that this is not a preferred option.***
2c	Connect to future SUC WMs in the NTC (north of the Jock River) at two locations	SUC	76 psi	64 psi	> 13,000 L/min	Requires crossing water way east of the Barrhaven Conservancy Lands. Land around ponds may not be accessible. Requires installation of a second separate WM through the existing north subdivision that is currently operated at 3SW pressures.

Reference: Hydraulic Potable Water Assessment for Barrhaven Conservancy Development Corporation

Alternative		Zone	Max Pressures	Min Pressures	Available Fire Flow at 20 psi	Limitations
2d	Connect to a future SUC WM through the Claridge lands (north of the Jock River) and connect to a 2nd future SUC WM from Barrhaven South (south of the Jock River – crossing river)	SUC	76 psi	61 psi	> 13,000 L/min	Requires crossing the Jock River. Requires crossing water way east of the Barrhaven Conservancy Lands. Land around ponds may not be accessible.
3	Connect to a future SUC WM that will run parallel to the future Strandherd WM and connect to the Strandherd 3SW WM using an automated valve to feed from 3SW under emergency conditions	SUC	76 psi (could potentially be > 80 psi depending on valve operation)	67 psi	> 13,000 L/min	Requires crossing water way east of the Barrhaven Conservancy Lands. Land around ponds may not be accessible. May possibly require PRVs at each service connection. An automated 3SW/SUC valve presents operational challenges and costs. Requires installation of a second separate WM along Strandherd Drive and through the existing north subdivision. ***Therefore, the City has indicated that this is not a preferred option.***

SUMMARY & RECOMMENDATIONS

The recent pump station upgrades at the Zone 3SW pump stations are nearing completion. For the purpose of this assessment, it is assumed that the demand for the Barrhaven Conservancy Lands is not accounted for in the current capacity of the Zone 3SW pumps but can be accommodated by the SUC pumps.

Alternative 1 for servicing the Conservancy Lands would eventually require changing the recently commissioned pumps at the Fallowfield Road Pumping and Station and one of the new pumps at the Barrhaven Pump Station and potentially some of the associated piping, valving, instrumentation, electrical and mechanical appurtenances for higher capacity pumps and appurtenances. Due to the anticipated maximum pressures exceeding 80 psi during basic day demands, individual PRVs will be required at each service connection if the lands operate at Zone 3SW pressure. It is understood from discussions with the City staff that this is not a preferred option.

Servicing the Conservancy Lands from Zone SUC requires the installation of a second separate watermain along Strandherd Drive and through the existing north subdivision and/or a crossing of a stormwater pond and/or the Jock River to complete a looping network. All four alternatives present their own challenges with either limited land access, crossings of a body of water, and/or requiring a new watermain to be installed along recently or soon to be (re)constructed right-of-ways. City staff have indicated that options requiring a separate

Reference: Hydraulic Potable Water Assessment for Barrhaven Conservancy Development Corporation

watermain along Strandherd (2a, 2b and 3) are not preferred since this portion of Strandherd Drive is undergoing widening as part of a separate recently awarded project and the timing for modifications does not work. As such, the City has identified Alternative 2c as the preferred servicing alternative, with 2d also being a viable option. Based on hydraulic modelling results along the trunk main looping through the Conservancy Lands, servicing of these lands with two 300 mm diameter watermains from the future 300 mm and 200 mm Claridge lands watermains (i.e., Alternative 2c) is possible, however ultimate optimization of sizing would have to be completed at a later phase.

An automated 3SW/SUC valve could potentially be considered for interim conditions, as discussed in Alternative 3, however inter-zonal automated valve connections are not typically used/accepted in the City of Ottawa and would present both operational challenges and costs to operate and maintain.

In addition to the secondary feeds proposed for each alternative, other system reliability measures may be considered as development continues to progress in adjacent lands. Measures may include providing additional looping between subdivisions and/or potential use of automated valves between the 3SW and SUC networks in this area for use under emergency conditions.

Sincerely,

Stantec Consulting Ltd.

Jasmin Sidhu P. Eng.
Water Resources Engineer

Phone: 613 725 5553
Fax: 613 722 2799
Jasmin.Sidhu@stantec.com

Kevin Alemany M.A.Sc., P. Eng.
Principal, Water, Regional Discipline Leader

Phone: 613 724 4091
Fax: 613 722 2799
Kevin.Alemany@stantec.com

Attachments:
Figure 1: Alternative 1 – Servicing from Zone 3SW
Figure 2: Alternative 2a – Servicing from Zone SUC (from Strandherd) w/ Secondary Feed from NTC
Figure 3: Alternative 2b – Servicing from Zone SUC (from Strandherd) w/ Secondary Feed from Barrhaven South
Figure 4: Alternative 2c – Servicing from Zone SUC (from NTC) w/ Secondary Feed from NTC
Figure 5: Alternative 2d – Servicing from Zone SUC (from Claridge Lands) w/ Secondary Feed from Barrhaven South
Figure 6: Alternative 3 – Servicing from Zone SUC w/ Automated Valve from 3SW for Emergency Conditions
Figure 7: Conservancy Lands System Node ID Map
Hydraulic Modelling Results

Figure 1: Alternative 1 - Servicing from Zone 3SW

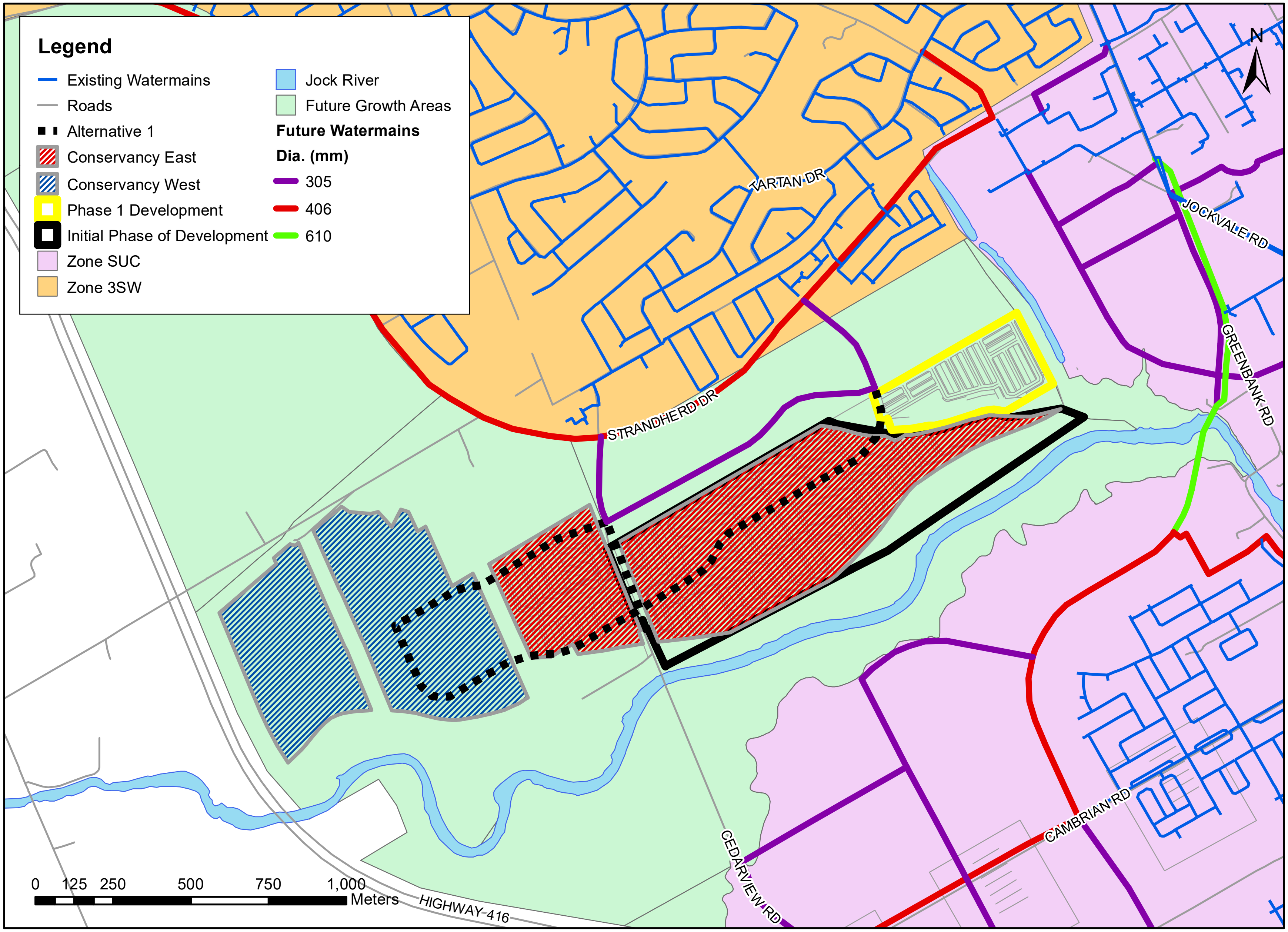


Figure 2: Alternative 2a - Servicing from Zone SUC (from Strandherd) w/ Secondary Feed from NTC

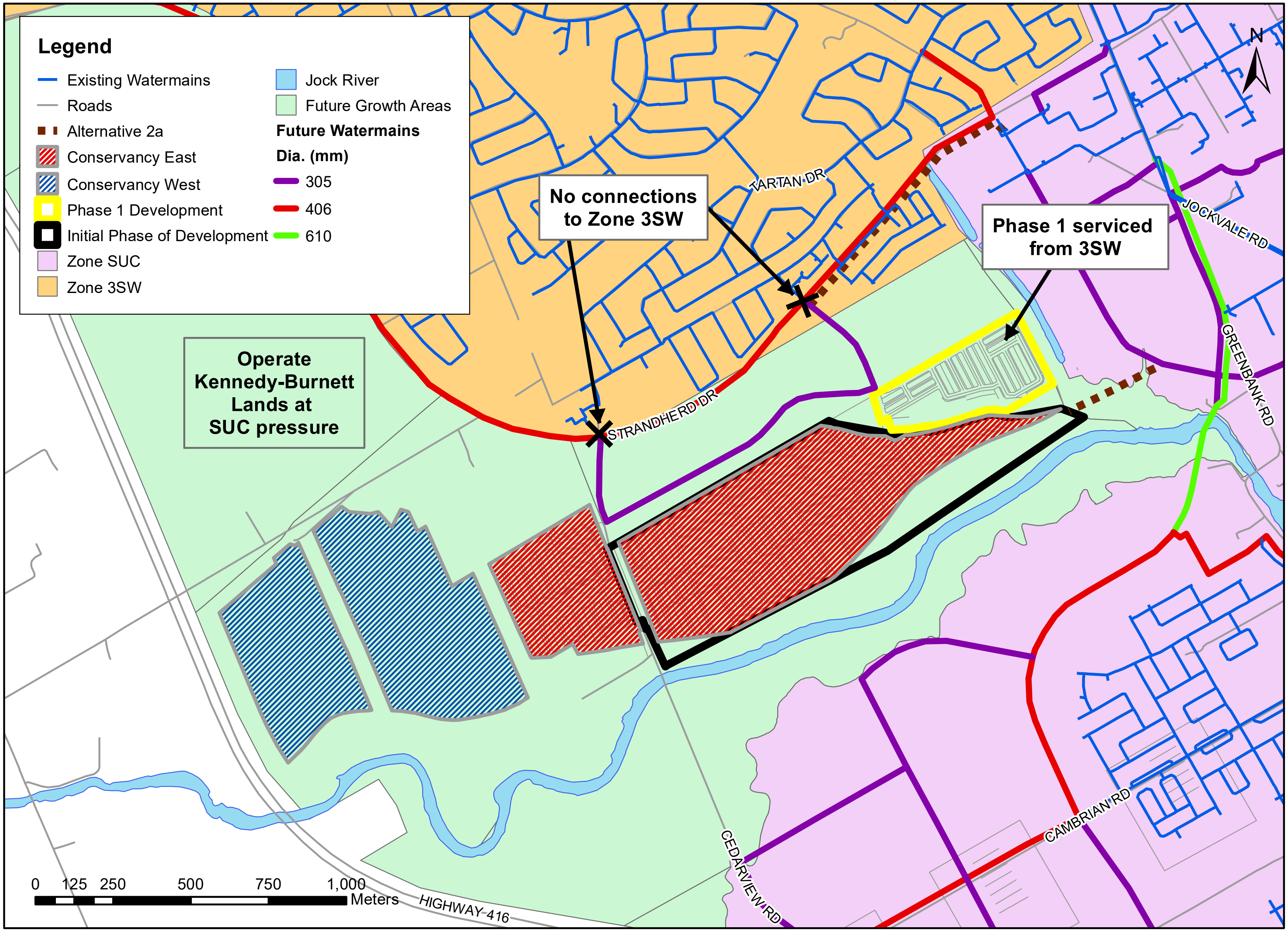


Figure 3: Alternative 2b - Servicing from Zone SUC (from Strandherd) w/ Secondary Feed from Barrhaven South

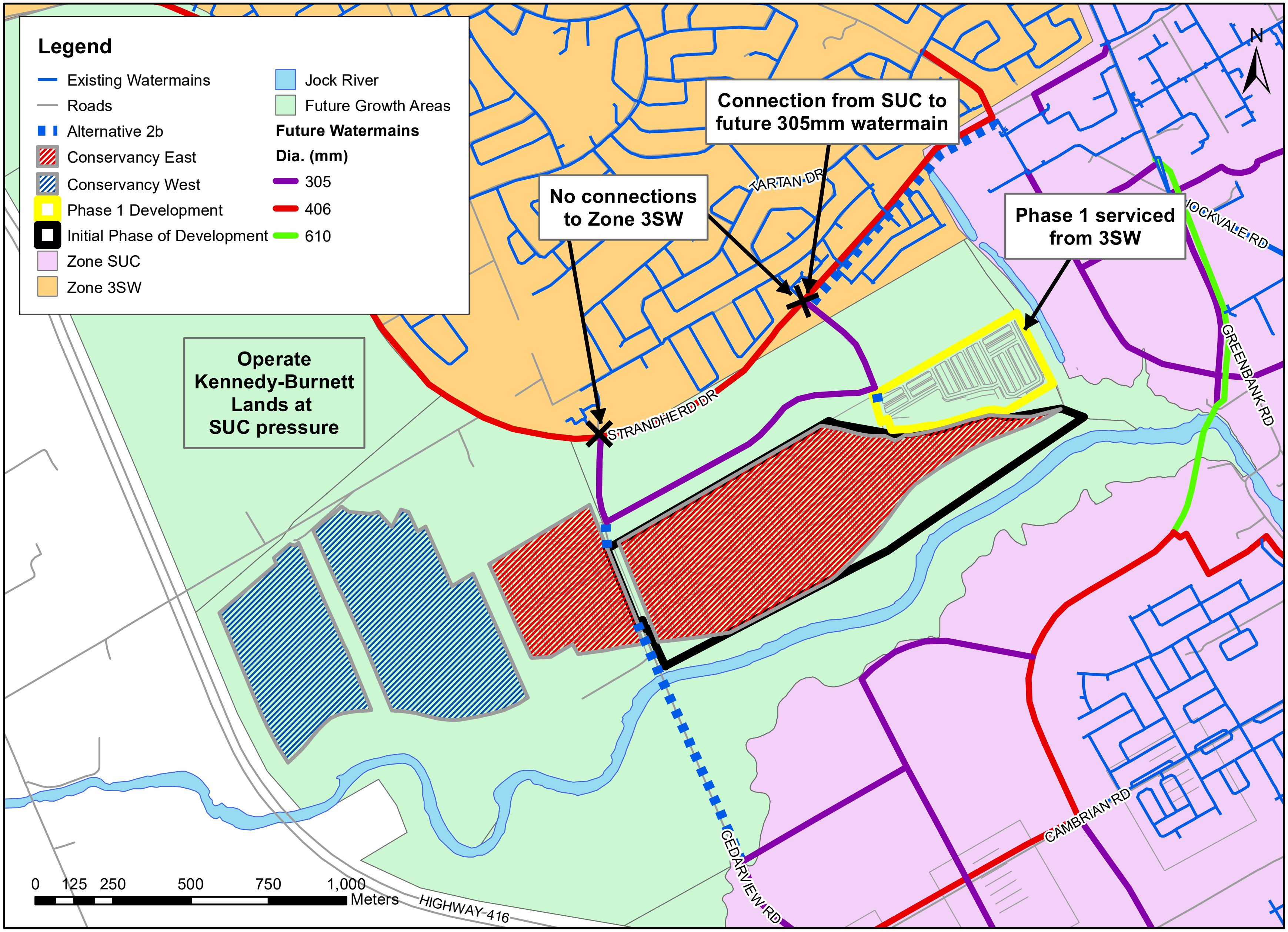


Figure 4: Alternative 2c - Servicing from Zone SUC (from NTC) w/ Secondary Feed from NTC

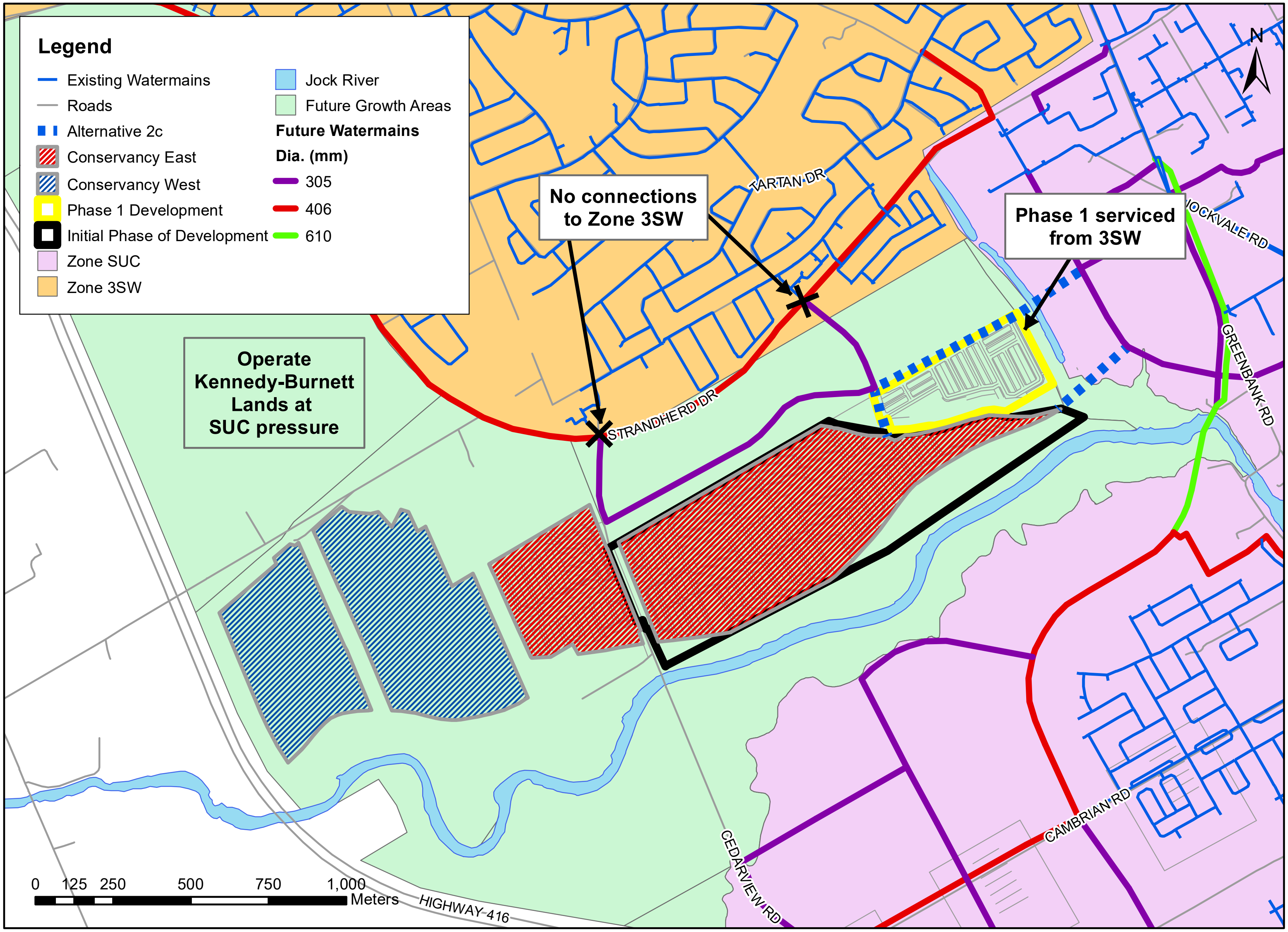


Figure 5: Alternative 2d - Servicing from Zone SUC (from Claridge Lands) w/ Secondary Feed from Barrhaven South

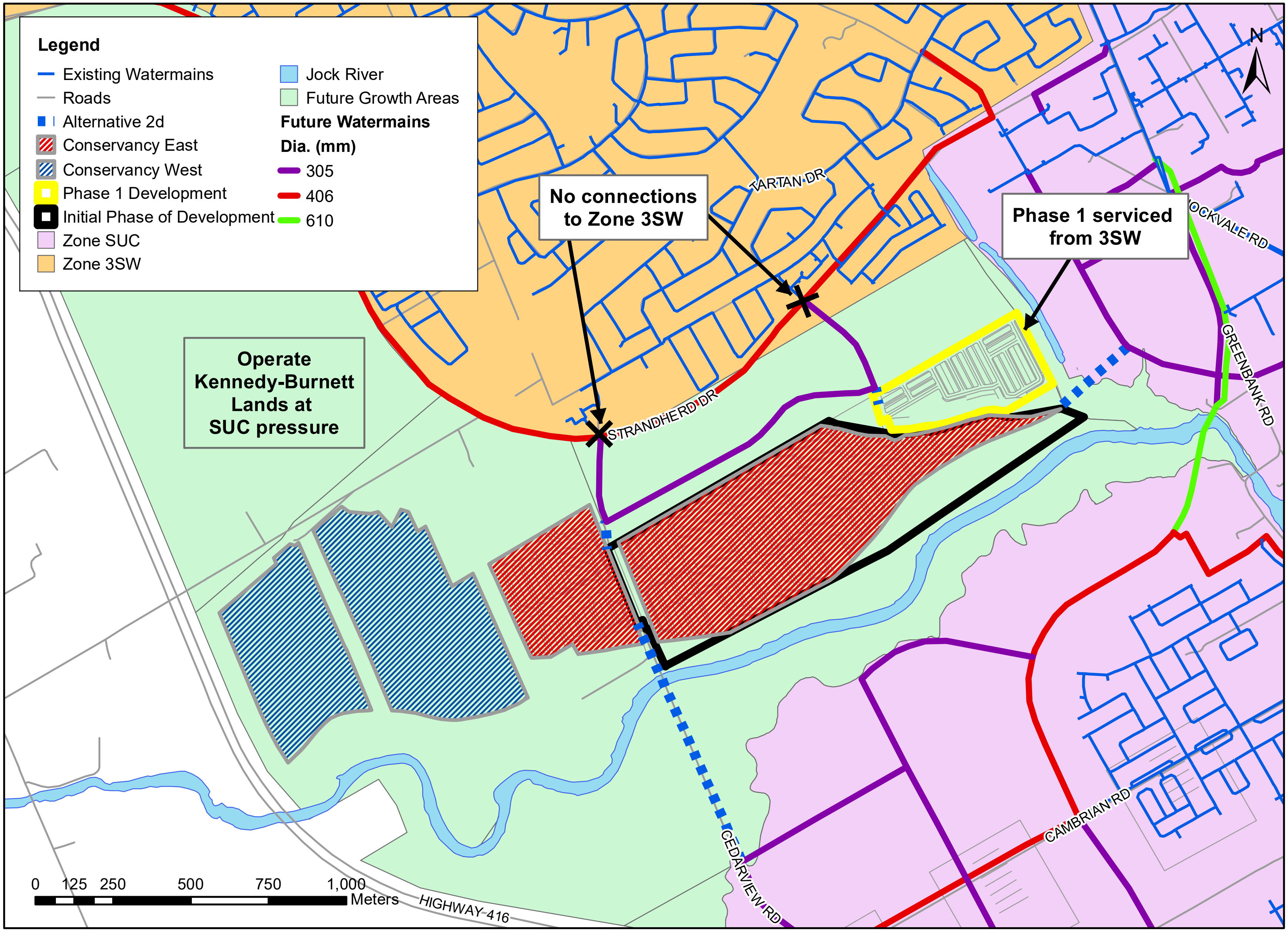


Figure 6: Alternative 3 - Servicing from Zone SUC w/ Automated Valve from 3SW for Emergency Conditions

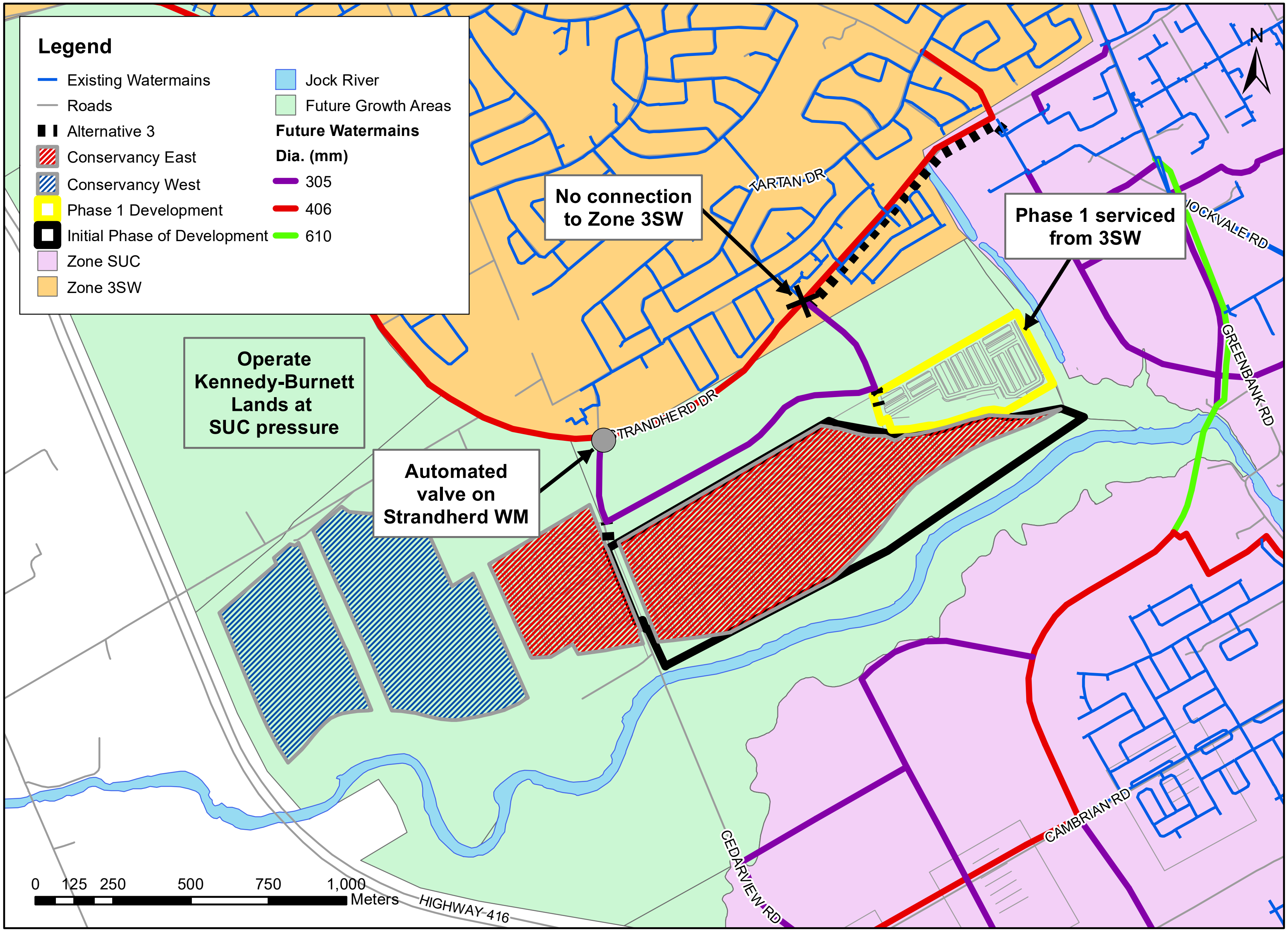
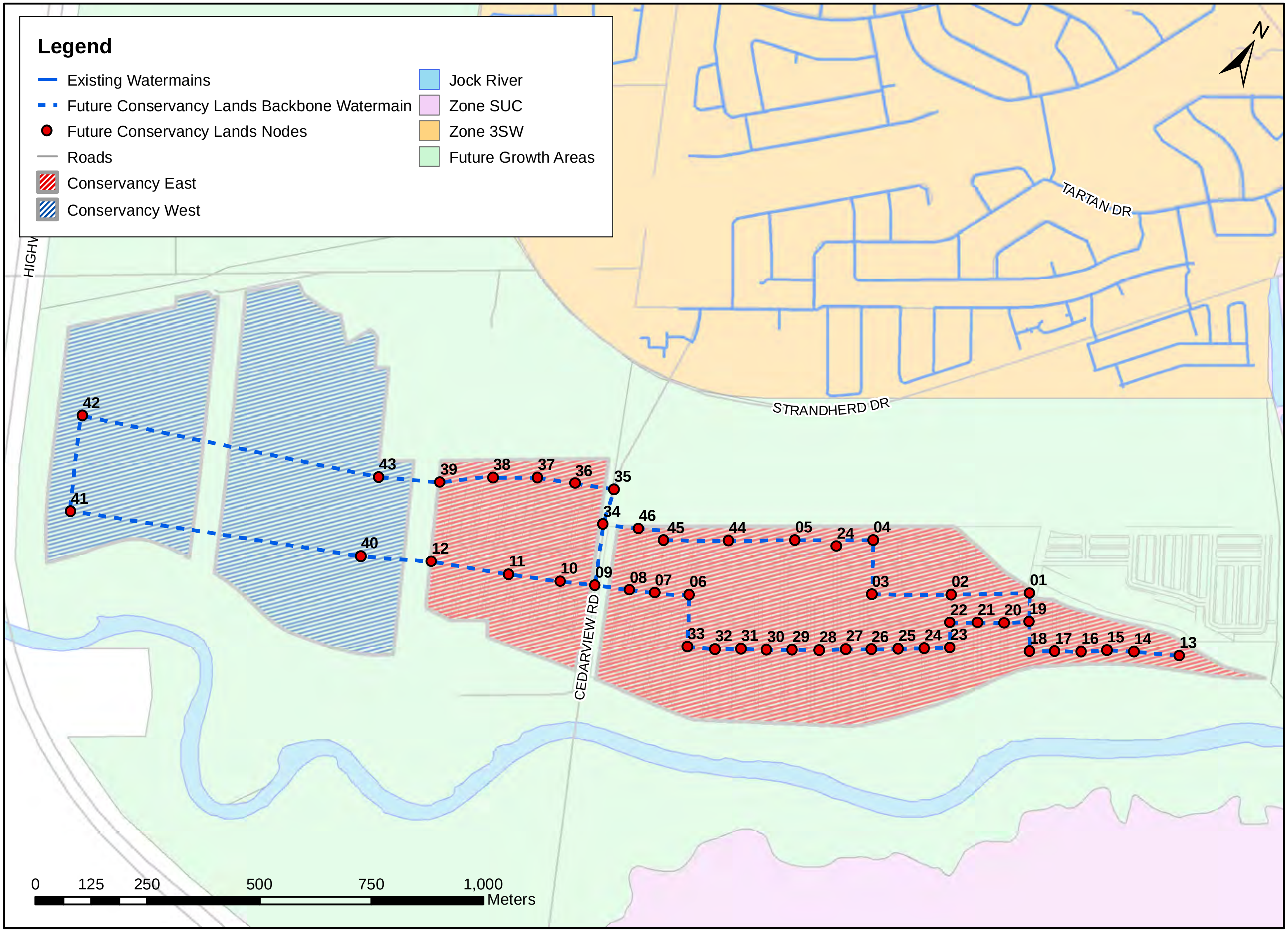


Figure 7: Conservancy Lands System Node ID Map



BSDY Model Results

	MIN	87.5						75.7						75.6					
	MAX	87.5						75.7						75.6					
		Servicing Alternative 1						Servicing Alternative 2a						Servicing Alternative 2b					
Model Node ID	Figure Node ID	Max Value (psi)	Max Time (hrs.)	Min Value (psi)	Min Time (hrs.)	Avg (psi)	Diff (psi)	Max Value (psi)	Max Time (hrs.)	Min Value (psi)	Min Time (hrs.)	Avg (psi)	Diff (psi)	Max Value (psi)	Max Time (hrs.)	Min Value (psi)	Min Time (hrs.)	Avg (psi)	Diff (psi)
F_BARRCONS_01	01	87.47	2:00	82.62	7:00	85.36	4.85	75.66	3:00	73.69	7:00	74.86	1.98	75.58	3:00	73.30	7:00	74.66	2.28
F_BARRCONS_02	02	87.47	2:00	82.62	7:00	85.36	4.85	75.66	3:00	73.66	7:00	74.85	2.01	75.58	3:00	73.28	7:00	74.66	2.29
F_BARRCONS_03	03	87.47	2:00	82.62	7:00	85.36	4.85	75.66	3:00	73.63	7:00	74.84	2.03	75.57	3:00	73.27	7:00	74.65	2.30
F_BARRCONS_04	04	87.47	2:00	82.62	7:00	85.36	4.85	75.66	3:00	73.61	7:00	74.83	2.05	75.57	3:00	73.27	7:00	74.65	2.30
F_BARRCONS_05	05	87.47	2:00	82.62	7:00	85.36	4.85	75.66	3:00	73.59	7:00	74.83	2.07	75.57	3:00	73.26	7:00	74.65	2.31
F_BARRCONS_06	06	87.47	2:00	82.60	7:00	85.35	4.87	75.66	3:00	73.56	7:00	74.81	2.10	75.57	3:00	73.25	7:00	74.64	2.31
F_BARRCONS_07	07	87.47	2:00	82.61	7:00	85.35	4.87	75.66	3:00	73.55	7:00	74.81	2.10	75.57	3:00	73.25	7:00	74.64	2.31
F_BARRCONS_08	08	87.47	2:00	82.61	7:00	85.35	4.86	75.66	3:00	73.55	7:00	74.81	2.10	75.57	3:00	73.25	7:00	74.64	2.31
F_BARRCONS_09	09	87.47	2:00	82.61	7:00	85.36	4.86	75.66	3:00	73.55	7:00	74.81	2.11	75.57	3:00	73.26	7:00	74.64	2.31
F_BARRCONS_10	10	87.47	2:00	82.61	7:00	85.36	4.86	75.66	3:00	73.55	7:00	74.81	2.11	75.57	3:00	73.25	7:00	74.64	2.31
F_BARRCONS_11	11	87.47	2:00	82.61	7:00	85.36	4.86	75.66	3:00	73.55	7:00	74.81	2.11	75.57	3:00	73.25	7:00	74.64	2.31
F_BARRCONS_12	12	87.47	2:00	82.61	7:00	85.36	4.86	75.66	3:00	73.55	7:00	74.81	2.11	75.57	3:00	73.25	7:00	74.64	2.32
F_BARRCONS_13	13	87.47	2:00	82.60	7:00	85.36	4.87	75.66	3:00	73.78	7:00	74.90	1.89	75.58	3:00	73.28	7:00	74.65	2.30
F_BARRCONS_14	14	87.47	2:00	82.60	7:00	85.36	4.87	75.66	3:00	73.75	7:00	74.89	1.91	75.58	3:00	73.28	7:00	74.65	2.30
F_BARRCONS_15	15	87.47	2:00	82.60	7:00	85.36	4.87	75.66	3:00	73.73	7:00	74.88	1.93	75.58	3:00	73.28	7:00	74.65	2.30
F_BARRCONS_16	16	87.47	2:00	82.60	7:00	85.36	4.87	75.66	3:00	73.72	7:00	74.88	1.94	75.58	3:00	73.28	7:00	74.65	2.30
F_BARRCONS_17	17	87.47	2:00	82.61	7:00	85.36	4.87	75.66	3:00	73.71	7:00	74.87	1.96	75.58	3:00	73.28	7:00	74.66	2.30
F_BARRCONS_18	18	87.47	2:00	82.61	7:00	85.36	4.87	75.66	3:00	73.70	7:00	74.87	1.97	75.58	3:00	73.28	7:00	74.66	2.30
F_BARRCONS_19	19	87.47	2:00	82.61	7:00	85.36	4.86	75.66	3:00	73.68	7:00	74.86	1.98	75.58	3:00	73.28	7:00	74.66	2.30
F_BARRCONS_20	20	87.47	2:00	82.61	7:00	85.36	4.87	75.66	3:00	73.67	7:00	74.86	1.99	75.57	3:00	73.28	7:00	74.65	2.30
F_BARRCONS_21	21	87.47	2:00	82.60	7:00	85.35	4.87	75.66	3:00	73.65	7:00	74.85	2.01	75.57	3:00	73.27	7:00	74.65	2.30
F_BARRCONS_22	22	87.47	2:00	82.60	7:00	85.35	4.87	75.66	3:00	73.64	7:00	74.85	2.02	75.57	3:00	73.27	7:00	74.65	2.31
F_BARRCONS_23	23	87.47	2:00	82.60	7:00	85.35	4.87	75.66	3:00	73.63	7:00	74.84	2.03	75.57	3:00	73.26	7:00	74.65	2.31
F_BARRCONS_25	25	87.47	2:00	82.60	7:00	85.35	4.87	75.66	3:00	73.61	7:00	74.83	2.05	75.57	3:00	73.26	7:00	74.64	2.31
F_BARRCONS_24	24	87.47	2:00	82.60	7:00	85.35	4.87	75.66	3:00	73.62	7:00	74.84	2.04	75.57	3:00	73.26	7:00	74.65	2.31
F_BARRCONS_26	26	87.47	2:00	82.60	7:00	85.35	4.87	75.66	3:00	73.60	7:00	74.83	2.06	75.57	3:00	73.26	7:00	74.64	2.31
F_BARRCONS_27	27	87.47	2:00	82.60	7:00	85.35	4.87	75.66	3:00	73.59	7:00	74.83	2.07	75.57	3:00	73.25	7:00	74.64	2.31
F_BARRCONS_28	28	87.47	2:00	82.60	7:00	85.35	4.87	75.66	3:00	73.58	7:00	74.82	2.08	75.57	3:00	73.25	7:00	74.64	2.32
F_BARRCONS_29	29	87.47	2:00	82.60	7:00	85.35	4.87	75.66	3:00	73.58	7:00	74.82	2.08	75.57	3:00	73.25	7:00	74.64	2.32
F_BARRCONS_30	30	87.47	2:00	82.60	7:00	85.35	4.87	75.66	3:00	73.57	7:00	74.82	2.09	75.57	3:00	73.25	7:00	74.64	2.31
F_BARRCONS_31	31	87.47	2:00	82.60	7:00	85.35	4.87	75.66	3:00	73.57	7:00	74.82	2.09	75.57	3:00	73.25	7:00	74.64	2.31
F_BARRCONS_32	32	87.47	2:00	82.60	7:00	85.35	4.87	75.66	3:00	73.56	7:00	74.82	2.09	75.57	3:00	73.25	7:00	74.64	2.31
F_BARRCONS_33	33	87.47	2:00	82.60	7:00	85.35	4.87	75.66	3:00	73.56	7:00	74.81	2.10	75.57	3:00	73.25	7:00	74.64	2.31
F_BARRCONS_34	34	87.47	2:00	82.62	7:00	85.36	4.85	75.66	3:00	73.55	7:00	74.81	2.11	75.57	3:00	73.25	7:00	74.64	2.31
F_BARRCONS_35	35	87.47	2:00	82.64	7:00	85.36	4.83	75.66	3:00	73.55	7:00	74.81	2.11	75.57	3:00	73.25	7:00	74.64	2.31
F_BARRCONS_36	36	87.47	2:00	82.63	7:00	85.36	4.84	75.66	3:00	73.55	7:00	74.81	2.11	75.57	3:00	73.25	7:00	74.64	2.32
F_BARRCONS_37	37	87.47	2:00	82.63	7:00	85.36	4.84	75.66	3:00	73.55	7:00	74.81	2.11	75.57	3:00	73.25	7:00	74.64	2.32
F_BARRCONS_38	38	87.47	2:00	82.63	7:00	85.36	4.85	75.66	3:00	73.55	7:00	74.81	2.11	75.57	3:00	73.25	7:00	74.64	2.32
F_BARRCONS_39	39	87.47	2:00	82.62	7:00	85.36	4.85	75.66	3:00	73.54	7:00	74.81	2.11	75.57	3:00	73.25	7:00	74.64	2.32
F_BARRCONS_40	40	87.47	2:00	82.61	7:00	85.36	4.86	75.66	3:00	73.54	7:00	74.81	2.11	75.57	3:00	73.25	7:00	74.64	2.32
F_BARRCONS_41	41	87.47	2:00	82.61	7:00	85.36	4.86	75.66	3:00	73.54	7:00	74.81	2.11	75.57	3:00	73.25	7:00	74.64	2.32
F_BARRCONS_42	42	87.47	2:00	82.61	7:00	85.36	4.86	75.66	3:00	73.54	7:00	74.81	2.11	75.57	3:00	73.25	7:00	74.64	2.32
F_BARRCONS_43	43	87.47	2:00	82.62	7:00	85.36	4.85	75.66	3:00	73.54	7:00	74.81	2.11	75.57	3:00	73.25	7:00	74.64	2.32
F_BARRCONS_44	44	87.47	2:00	82.62	7:00	85.36	4.85	75.66	3:00	73.58	7:00	74.82	2.08	75.57	3:00	73.26	7:00	74.64	2.31
F_BARRCONS_45	45	87.47	2:00	82.62	7:00	85.36	4.85	75.66	3:00	73.56	7:00	74.82	2.10	75.57	3:00	73.26	7:00	74.64	2.31
F_BARRCONS_46	46	87.47	2:00	82.62	7:00	85.36	4.85	75.66	3:00	73.56	7:00	74.81	2.10	75.57	3:00	73.25	7:00	74.64	2.31

BSDY Model Results (cont'd)

	MIN	*75.7*						*75.6*						*75.6*					
	MAX	*75.7*						*75.6*						*75.6*					
		Servicing Alternative 2c						Servicing Alternative 2d						Servicing Alternative 3					
Model Node ID	Figure Node ID	Max Value (psi)	Max Time (hrs.)	Min Value (psi)	Min Time (hrs.)	Avg (psi)	Diff (psi)	Max Value (psi)	Max Time (hrs.)	Min Value (psi)	Min Time (hrs.)	Avg (psi)	Diff (psi)	Max Value (psi)	Max Time (hrs.)	Min Value (psi)	Min Time (hrs.)	Avg (psi)	Diff (psi)
F_BARRCONS_01	01	75.66	3:00	73.73	7:00	74.87	1.93	75.57	3:00	73.32	7:00	74.66	2.25	75.63	3:00	72.17	7:00	74.29	3.45
F_BARRCONS_02	02	75.66	3:00	73.70	7:00	74.86	1.95	75.57	3:00	73.31	7:00	74.66	2.26	75.63	3:00	72.14	7:00	74.28	3.49
F_BARRCONS_03	03	75.65	3:00	73.67	7:00	74.85	1.98	75.56	3:00	73.30	7:00	74.65	2.27	75.63	3:00	72.11	7:00	74.27	3.51
F_BARRCONS_04	04	75.65	3:00	73.66	7:00	74.84	2.00	75.56	3:00	73.29	7:00	74.65	2.27	75.62	3:00	72.09	7:00	74.26	3.53
F_BARRCONS_05	05	75.65	3:00	73.64	7:00	74.84	2.02	75.56	3:00	73.29	7:00	74.65	2.27	75.62	3:00	72.07	7:00	74.25	3.55
F_BARRCONS_06	06	75.65	3:00	73.60	7:00	74.82	2.05	75.56	3:00	73.28	7:00	74.64	2.28	75.62	3:00	72.03	7:00	74.23	3.59
F_BARRCONS_07	07	75.65	3:00	73.60	7:00	74.82	2.05	75.56	3:00	73.28	7:00	74.64	2.28	75.62	3:00	72.03	7:00	74.23	3.59
F_BARRCONS_08	08	75.65	3:00	73.60	7:00	74.82	2.05	75.56	3:00	73.28	7:00	74.64	2.28	75.62	3:00	72.03	7:00	74.23	3.60
F_BARRCONS_09	09	75.65	3:00	73.60	7:00	74.82	2.05	75.56	3:00	73.28	7:00	74.64	2.28	75.62	3:00	72.03	7:00	74.23	3.60
F_BARRCONS_10	10	75.65	3:00	73.60	7:00	74.82	2.06	75.56	3:00	73.28	7:00	74.64	2.28	75.62	3:00	72.02	7:00	74.23	3.60
F_BARRCONS_11	11	75.65	3:00	73.59	7:00	74.82	2.06	75.56	3:00	73.28	7:00	74.64	2.28	75.62	3:00	72.02	7:00	74.23	3.60
F_BARRCONS_12	12	75.65	3:00	73.59	7:00	74.82	2.06	75.56	3:00	73.27	7:00	74.64	2.28	75.62	3:00	72.02	7:00	74.23	3.60
F_BARRCONS_13	13	75.66	3:00	73.80	7:00	74.90	1.85	75.60	3:00	73.53	7:00	74.76	2.07	75.63	3:00	72.14	7:00	74.28	3.49
F_BARRCONS_14	14	75.66	3:00	73.78	7:00	74.89	1.88	75.59	3:00	73.47	7:00	74.73	2.12	75.63	3:00	72.14	7:00	74.28	3.49
F_BARRCONS_15	15	75.66	3:00	73.77	7:00	74.89	1.89	75.59	3:00	73.44	7:00	74.72	2.15	75.63	3:00	72.14	7:00	74.28	3.49
F_BARRCONS_16	16	75.66	3:00	73.76	7:00	74.88	1.90	75.58	3:00	73.41	7:00	74.70	2.17	75.63	3:00	72.14	7:00	74.28	3.49
F_BARRCONS_17	17	75.66	3:00	73.75	7:00	74.88	1.91	75.58	3:00	73.38	7:00	74.69	2.20	75.63	3:00	72.14	7:00	74.28	3.48
F_BARRCONS_18	18	75.66	3:00	73.74	7:00	74.87	1.92	75.57	3:00	73.35	7:00	74.68	2.22	75.63	3:00	72.14	7:00	74.28	3.48
F_BARRCONS_19	19	75.66	3:00	73.73	7:00	74.87	1.93	75.57	3:00	73.33	7:00	74.66	2.24	75.63	3:00	72.15	7:00	74.28	3.48
F_BARRCONS_20	20	75.66	3:00	73.71	7:00	74.87	1.94	75.57	3:00	73.32	7:00	74.66	2.25	75.63	3:00	72.13	7:00	74.27	3.50
F_BARRCONS_21	21	75.66	3:00	73.70	7:00	74.86	1.96	75.57	3:00	73.31	7:00	74.66	2.26	75.63	3:00	72.12	7:00	74.27	3.51
F_BARRCONS_22	22	75.66	3:00	73.68	7:00	74.85	1.97	75.57	3:00	73.30	7:00	74.65	2.26	75.62	3:00	72.10	7:00	74.26	3.52
F_BARRCONS_23	23	75.65	3:00	73.67	7:00	74.85	1.98	75.57	3:00	73.30	7:00	74.65	2.27	75.62	3:00	72.09	7:00	74.26	3.53
F_BARRCONS_25	25	75.65	3:00	73.65	7:00	74.84	2.00	75.56	3:00	73.29	7:00	74.65	2.27	75.62	3:00	72.07	7:00	74.25	3.55
F_BARRCONS_24	24	75.65	3:00	73.66	7:00	74.85	1.99	75.56	3:00	73.30	7:00	74.65	2.27	75.62	3:00	72.08	7:00	74.25	3.54
F_BARRCONS_26	26	75.65	3:00	73.64	7:00	74.84	2.01	75.56	3:00	73.29	7:00	74.65	2.27	75.62	3:00	72.06	7:00	74.25	3.56
F_BARRCONS_27	27	75.65	3:00	73.64	7:00	74.83	2.02	75.56	3:00	73.29	7:00	74.65	2.28	75.62	3:00	72.06	7:00	74.25	3.57
F_BARRCONS_28	28	75.65	3:00	73.63	7:00	74.83	2.02	75.56	3:00	73.28	7:00	74.64	2.28	75.62	3:00	72.05	7:00	74.24	3.57
F_BARRCONS_29	29	75.65	3:00	73.62	7:00	74.83	2.03	75.56	3:00	73.28	7:00	74.64	2.28	75.62	3:00	72.05	7:00	74.24	3.58
F_BARRCONS_30	30	75.65	3:00	73.62	7:00	74.83	2.04	75.56	3:00	73.28	7:00	74.64	2.28	75.62	3:00	72.04	7:00	74.24	3.58
F_BARRCONS_31	31	75.65	3:00	73.61	7:00	74.83	2.04	75.56	3:00	73.28	7:00	74.64	2.28	75.62	3:00	72.04	7:00	74.24	3.58
F_BARRCONS_32	32	75.65	3:00	73.61	7:00	74.82	2.04	75.56	3:00	73.28	7:00	74.64	2.28	75.62	3:00	72.04	7:00	74.24	3.59
F_BARRCONS_33	33	75.65	3:00	73.61	7:00	74.82	2.05	75.56	3:00	73.28	7:00	74.64	2.28	75.62	3:00	72.03	7:00	74.24	3.59
F_BARRCONS_34	34	75.65	3:00	73.60	7:00	74.82	2.05	75.56	3:00	73.28	7:00	74.64	2.28	75.62	3:00	72.03	7:00	74.23	3.60
F_BARRCONS_35	35	75.65	3:00	73.60	7:00	74.82	2.06	75.56	3:00	73.28	7:00	74.64	2.28	75.62	3:00	72.02	7:00	74.23	3.60
F_BARRCONS_36	36	75.65	3:00	73.59	7:00	74.82	2.06	75.56	3:00	73.28	7:00	74.64	2.28	75.62	3:00	72.02	7:00	74.23	3.60
F_BARRCONS_37	37	75.65	3:00	73.59	7:00	74.82	2.06	75.56	3:00	73.27	7:00	74.64	2.28	75.62	3:00	72.02	7:00	74.23	3.60
F_BARRCONS_38	38	75.65	3:00	73.59	7:00	74.82	2.06	75.56	3:00	73.27	7:00	74.64	2.28	75.62	3:00	72.02	7:00	74.23	3.60
F_BARRCONS_39	39	75.65	3:00	73.59	7:00	74.82	2.06	75.56	3:00	73.27	7:00	74.64	2.29	75.62	3:00	72.02	7:00	74.23	3.60
F_BARRCONS_40	40	75.65	3:00	73.59	7:00	74.82	2.06	75.56	3:00	73.27	7:00	74.64	2.28	75.62	3:00	72.02	7:00	74.23	3.60
F_BARRCONS_41	41	75.65	3:00	73.59	7:00	74.82	2.06	75.56	3:00	73.27	7:00	74.64	2.29	75.62	3:00	72.02	7:00	74.23	3.60
F_BARRCONS_42	42	75.65	3:00	73.59	7:00	74.82	2.06	75.56	3:00	73.27	7:00	74.64	2.29	75.62	3:00	72.02	7:00	74.23	3.60
F_BARRCONS_43	43	75.65	3:00	73.59	7:00	74.82	2.06	75.56	3:00	73.27	7:00	74.64	2.29	75.62	3:00	72.02	7:00	74.23	3.60
F_BARRCONS_44	44	75.65	3:00	73.62	7:00	74.83	2.03	75.56	3:00	73.28	7:00	74.64	2.28	75.62	3:00	72.05	7:00	74.24	3.57
F_BARRCONS_45	45	75.65	3:00	73.61	7:00	74.82	2.04	75.56	3:00	73.28	7:00	74.64	2.28	75.62	3:00	72.04	7:00	74.24	3.58
F_BARRCONS_46	46	75.65	3:00	73.60	7:00	74.82	2.05	75.56	3:00	73.28	7:00	74.64	2.28	75.62	3:00	72.03	7:00	74.24	3.59

PKHR Model Results

MIN				*51.9*						*63.6*						*61.3*			
MAX				*51.9*						*64.0*						*61.6*			
Model Node ID	Figure Node ID	Servicing Alternative 1						Servicing Alternative 2a						Servicing Alternative 2b					
		Max Value (psi)	Max Time (hrs.)	Min Value (psi)	Min Time (hrs.)	Avg (psi)	Diff (psi)	Max Value (psi)	Max Time (hrs.)	Min Value (psi)	Min Time (hrs.)	Avg (psi)	Diff (psi)	Max Value (psi)	Max Time (hrs.)	Min Value (psi)	Min Time (hrs.)	Avg (psi)	Diff (psi)
F_BARRCONS_01	01	86.63	0:00	51.91	22:00	75.81	34.73	75.56	3:00	63.93	20:00	72.35	11.63	75.47	3:00	61.59	20:00	71.64	13.88
F_BARRCONS_02	02	86.63	0:00	51.90	22:00	75.81	34.73	75.55	3:00	63.87	20:00	72.31	11.69	75.47	3:00	61.53	20:00	71.62	13.94
F_BARRCONS_03	03	86.63	0:00	51.90	22:00	75.80	34.74	75.55	3:00	63.81	20:00	72.27	11.74	75.46	3:00	61.47	20:00	71.60	13.99
F_BARRCONS_04	04	86.63	0:00	51.90	22:00	75.80	34.74	75.55	3:00	63.78	20:00	72.24	11.77	75.46	3:00	61.44	20:00	71.59	14.02
F_BARRCONS_05	05	86.63	0:00	51.89	22:00	75.80	34.74	75.54	3:00	63.73	20:00	72.21	11.81	75.46	3:00	61.40	20:00	71.58	14.06
F_BARRCONS_06	06	86.63	0:00	51.87	22:00	75.78	34.76	75.54	3:00	63.66	20:00	72.16	11.88	75.46	3:00	61.33	20:00	71.56	14.13
F_BARRCONS_07	07	86.63	0:00	51.87	22:00	75.78	34.76	75.54	3:00	63.65	20:00	72.16	11.88	75.46	3:00	61.32	20:00	71.57	14.14
F_BARRCONS_08	08	86.63	0:00	51.87	22:00	75.78	34.76	75.54	3:00	63.65	20:00	72.16	11.88	75.46	3:00	61.32	20:00	71.57	14.14
F_BARRCONS_09	09	86.63	0:00	51.88	22:00	75.79	34.75	75.54	3:00	63.65	20:00	72.15	11.89	75.46	3:00	61.32	20:00	71.57	14.14
F_BARRCONS_10	10	86.63	0:00	51.88	22:00	75.79	34.75	75.53	3:00	63.65	20:00	72.15	11.89	75.46	3:00	61.32	20:00	71.56	14.14
F_BARRCONS_11	11	86.63	0:00	51.88	22:00	75.79	34.75	75.53	3:00	63.64	20:00	72.15	11.89	75.46	3:00	61.31	20:00	71.56	14.15
F_BARRCONS_12	12	86.63	0:00	51.88	22:00	75.79	34.75	75.53	3:00	63.64	20:00	72.15	11.90	75.46	3:00	61.31	20:00	71.56	14.15
F_BARRCONS_13	13	86.63	0:00	51.88	22:00	75.79	34.75	75.57	3:00	64.04	20:00	72.48	11.54	75.47	3:00	61.52	20:00	71.61	13.94
F_BARRCONS_14	14	86.63	0:00	51.88	22:00	75.79	34.75	75.57	3:00	64.00	20:00	72.44	11.57	75.47	3:00	61.52	20:00	71.61	13.94
F_BARRCONS_15	15	86.63	0:00	51.88	22:00	75.79	34.75	75.57	3:00	63.98	20:00	72.42	11.59	75.47	3:00	61.52	20:00	71.61	13.94
F_BARRCONS_16	16	86.63	0:00	51.88	22:00	75.79	34.75	75.56	3:00	63.96	20:00	72.40	11.60	75.47	3:00	61.53	20:00	71.61	13.94
F_BARRCONS_17	17	86.63	0:00	51.88	22:00	75.79	34.75	75.56	3:00	63.95	20:00	72.38	11.62	75.47	3:00	61.53	20:00	71.61	13.94
F_BARRCONS_18	18	86.63	0:00	51.89	22:00	75.79	34.74	75.56	3:00	63.93	20:00	72.36	11.63	75.47	3:00	61.53	20:00	71.62	13.94
F_BARRCONS_19	19	86.63	0:00	51.89	22:00	75.80	34.74	75.56	3:00	63.92	20:00	72.35	11.64	75.47	3:00	61.53	20:00	71.62	13.93
F_BARRCONS_20	20	86.63	0:00	51.88	22:00	75.79	34.75	75.56	3:00	63.89	20:00	72.32	11.67	75.47	3:00	61.51	20:00	71.61	13.96
F_BARRCONS_21	21	86.63	0:00	51.88	22:00	75.79	34.75	75.55	3:00	63.86	20:00	72.30	11.70	75.46	3:00	61.48	20:00	71.60	13.98
F_BARRCONS_22	22	86.63	0:00	51.87	22:00	75.78	34.75	75.55	3:00	63.83	20:00	72.28	11.72	75.46	3:00	61.46	20:00	71.59	14.01
F_BARRCONS_23	23	86.63	0:00	51.87	22:00	75.78	34.76	75.55	3:00	63.80	20:00	72.26	11.75	75.46	3:00	61.44	20:00	71.59	14.03
F_BARRCONS_25	25	86.63	0:00	51.87	22:00	75.78	34.76	75.54	3:00	63.76	20:00	72.23	11.78	75.46	3:00	61.40	20:00	71.58	14.06
F_BARRCONS_24	24	86.63	0:00	51.87	22:00	75.78	34.76	75.55	3:00	63.78	20:00	72.25	11.77	75.46	3:00	61.42	20:00	71.58	14.04
F_BARRCONS_26	26	86.63	0:00	51.87	22:00	75.78	34.76	75.54	3:00	63.74	20:00	72.22	11.80	75.46	3:00	61.39	20:00	71.57	14.07
F_BARRCONS_27	27	86.63	0:00	51.87	22:00	75.78	34.76	75.54	3:00	63.73	20:00	72.21	11.82	75.46	3:00	61.37	20:00	71.57	14.09
F_BARRCONS_28	28	86.63	0:00	51.87	22:00	75.78	34.76	75.54	3:00	63.71	20:00	72.20	11.83	75.46	3:00	61.36	20:00	71.57	14.10
F_BARRCONS_29	29	86.63	0:00	51.87	22:00	75.78	34.76	75.54	3:00	63.70	20:00	72.19	11.84	75.46	3:00	61.35	20:00	71.57	14.11
F_BARRCONS_30	30	86.63	0:00	51.87	22:00	75.78	34.76	75.54	3:00	63.69	20:00	72.18	11.85	75.46	3:00	61.35	20:00	71.57	14.11
F_BARRCONS_31	31	86.63	0:00	51.87	22:00	75.78	34.76	75.54	3:00	63.68	20:00	72.18	11.86	75.46	3:00	61.34	20:00	71.56	14.12
F_BARRCONS_32	32	86.63	0:00	51.87	22:00	75.78	34.76	75.54	3:00	63.67	20:00	72.17	11.86	75.46	3:00	61.34	20:00	71.56	14.12
F_BARRCONS_33	33	86.63	0:00	51.87	22:00	75.78	34.76	75.54	3:00	63.67	20:00	72.17	11.87	75.46	3:00	61.33	20:00	71.56	14.13
F_BARRCONS_34	34	86.63	0:00	51.90	22:00	75.80	34.74	75.54	3:00	63.65	20:00	72.15	11.88	75.46	3:00	61.32	20:00	71.57	14.14
F_BARRCONS_35	35	86.64	0:00	51.91	22:00	75.82	34.73	75.53	3:00	63.65	20:00	72.15	11.89	75.46	3:00	61.32	20:00	71.56	14.14
F_BARRCONS_36	36	86.64	0:00	51.90	22:00	75.81	34.73	75.53	3:00	63.64	20:00	72.15	11.89	75.46	3:00	61.31	20:00	71.56	14.15
F_BARRCONS_37	37	86.64	0:00	51.90	22:00	75.81	34.74	75.53	3:00	63.64	20:00	72.15	11.89	75.46	3:00	61.31	20:00	71.56	14.15
F_BARRCONS_38	38	86.64	0:00	51.89	22:00	75.80	34.74	75.53	3:00	63.64	20:00	72.15	11.90	75.46	3:00	61.31	20:00	71.56	14.15
F_BARRCONS_39	39	86.63	0:00	51.89	22:00	75.80	34.75	75.53	3:00	63.64	20:00	72.14	11.90	75.46	3:00	61.31	20:00	71.56	14.15
F_BARRCONS_40	40	86.63	0:00	51.88	22:00	75.79	34.75	75.53	3:00	63.64	20:00	72.15	11.90	75.46	3:00	61.31	20:00	71.56	14.15
F_BARRCONS_41	41	86.63	0:00	51.88	22:00	75.79	34.75	75.53	3:00	63.64	20:00	72.14	11.90	75.46	3:00	61.31	20:00	71.56	14.15
F_BARRCONS_42	42	86.63	0:00	51.88	22:00	75.79	34.75	75.53	3:00	63.64	20:00	72.14	11.90	75.46	3:00	61.31	20:00	71.56	14.15
F_BARRCONS_43	43	86.63	0:00	51.89	22:00	75.80	34.75	75.53	3:00	63.64	20:00	72.14	11.90	75.46	3:00	61.31	20:00	71.56	14.15
F_BARRCONS_44	44	86.63	0:00	51.89	22:00	75.80	34.74	75.54	3:00	63.70	20:00	72.19	11.84	75.46	3:00	61.37	20:00	71.58	14.09
F_BARRCONS_45	45	86.63	0:00	51.89	22:00	75.80	34.74	75.54	3:00	63.67	20:00	72.17	11.86	75.46	3:00	61.34	20:00	71.57	14.12
F_BARRCONS_46	46	86.63	0:00	51.89	22:00	75.80	34.74	75.54	3:00	63.66	20:00	72.16	11.87	75.46	3:00	61.33	20:00	71.57	14.13

PKHR Model Results (cont'd)

	MIN			63.6						61.2						66.7			
	MAX			64.0						62.4						66.9			
		Servicing Alternative 2c						Servicing Alternative 2d						Servicing Alternative 3					
Model Node ID	Figure Node ID	Max Value (psi)	Max Time (hrs.)	Min Value (psi)	Min Time (hrs.)	Avg (psi)	Diff (psi)	Max Value (psi)	Max Time (hrs.)	Min Value (psi)	Min Time (hrs.)	Avg (psi)	Diff (psi)	Max Value (psi)	Max Time (hrs.)	Min Value (psi)	Min Time (hrs.)	Avg (psi)	Diff (psi)
F_BARRCONS_01	01	75.56	3:00	63.93	20:00	72.41	11.63	75.47	3:00	61.52	20:00	71.67	13.95	75.30	3:00	66.72	20:00	70.77	8.58
F_BARRCONS_02	02	75.56	3:00	63.87	20:00	72.37	11.69	75.46	3:00	61.46	20:00	71.65	14.01	75.29	3:00	66.73	20:00	70.73	8.57
F_BARRCONS_03	03	75.55	3:00	63.81	20:00	72.33	11.74	75.46	3:00	61.40	20:00	71.63	14.06	75.29	3:00	66.74	20:00	70.70	8.55
F_BARRCONS_04	04	75.55	3:00	63.78	20:00	72.31	11.77	75.46	3:00	61.37	20:00	71.62	14.09	75.28	3:00	66.74	20:00	70.68	8.54
F_BARRCONS_05	05	75.54	3:00	63.73	20:00	72.28	11.81	75.46	3:00	61.33	20:00	71.61	14.13	75.28	3:00	66.76	20:00	70.65	8.52
F_BARRCONS_06	06	75.54	3:00	63.66	20:00	72.22	11.88	75.46	3:00	61.26	20:00	71.60	14.20	75.27	3:00	66.74	20:00	70.60	8.53
F_BARRCONS_07	07	75.54	3:00	63.66	20:00	72.22	11.88	75.46	3:00	61.25	20:00	71.60	14.20	75.27	3:00	66.75	20:00	70.60	8.52
F_BARRCONS_08	08	75.54	3:00	63.65	20:00	72.22	11.88	75.46	3:00	61.25	20:00	71.60	14.21	75.27	3:00	66.76	20:00	70.60	8.51
F_BARRCONS_09	09	75.54	3:00	63.65	20:00	72.22	11.89	75.46	3:00	61.25	20:00	71.60	14.21	75.27	3:00	66.78	20:00	70.60	8.49
F_BARRCONS_10	10	75.54	3:00	63.65	20:00	72.22	11.89	75.46	3:00	61.24	20:00	71.59	14.21	75.27	3:00	66.78	20:00	70.60	8.49
F_BARRCONS_11	11	75.54	3:00	63.64	20:00	72.21	11.89	75.46	3:00	61.24	20:00	71.59	14.22	75.27	3:00	66.78	20:00	70.60	8.49
F_BARRCONS_12	12	75.54	3:00	63.64	20:00	72.21	11.90	75.46	3:00	61.24	20:00	71.59	14.22	75.27	3:00	66.78	20:00	70.60	8.49
F_BARRCONS_13	13	75.57	3:00	64.02	20:00	72.52	11.55	75.51	3:00	62.39	20:00	72.01	13.12	75.29	3:00	66.70	20:00	70.73	8.59
F_BARRCONS_14	14	75.57	3:00	63.99	20:00	72.48	11.58	75.50	3:00	62.16	20:00	71.92	13.34	75.29	3:00	66.70	20:00	70.73	8.59
F_BARRCONS_15	15	75.57	3:00	63.97	20:00	72.46	11.60	75.49	3:00	62.02	20:00	71.86	13.47	75.29	3:00	66.70	20:00	70.73	8.59
F_BARRCONS_16	16	75.57	3:00	63.95	20:00	72.45	11.61	75.48	3:00	61.90	20:00	71.82	13.59	75.29	3:00	66.70	20:00	70.73	8.59
F_BARRCONS_17	17	75.56	3:00	63.94	20:00	72.43	11.62	75.48	3:00	61.78	20:00	71.77	13.70	75.29	3:00	66.71	20:00	70.73	8.59
F_BARRCONS_18	18	75.56	3:00	63.93	20:00	72.42	11.63	75.47	3:00	61.67	20:00	71.73	13.81	75.29	3:00	66.71	20:00	70.73	8.59
F_BARRCONS_19	19	75.56	3:00	63.92	20:00	72.41	11.64	75.47	3:00	61.55	20:00	71.68	13.92	75.29	3:00	66.71	20:00	70.73	8.58
F_BARRCONS_20	20	75.56	3:00	63.89	20:00	72.39	11.67	75.47	3:00	61.51	20:00	71.67	13.96	75.29	3:00	66.71	20:00	70.72	8.58
F_BARRCONS_21	21	75.56	3:00	63.86	20:00	72.37	11.70	75.46	3:00	61.48	20:00	71.66	13.99	75.29	3:00	66.71	20:00	70.70	8.58
F_BARRCONS_22	22	75.55	3:00	63.83	20:00	72.34	11.73	75.46	3:00	61.45	20:00	71.64	14.02	75.29	3:00	66.71	20:00	70.68	8.58
F_BARRCONS_23	23	75.55	3:00	63.80	20:00	72.33	11.75	75.46	3:00	61.42	20:00	71.64	14.04	75.28	3:00	66.71	20:00	70.67	8.58
F_BARRCONS_25	25	75.55	3:00	63.76	20:00	72.30	11.79	75.46	3:00	61.37	20:00	71.62	14.09	75.28	3:00	66.71	20:00	70.65	8.57
F_BARRCONS_24	24	75.55	3:00	63.78	20:00	72.31	11.77	75.46	3:00	61.40	20:00	71.63	14.06	75.28	3:00	66.71	20:00	70.66	8.58
F_BARRCONS_26	26	75.55	3:00	63.74	20:00	72.28	11.80	75.46	3:00	61.35	20:00	71.62	14.11	75.28	3:00	66.71	20:00	70.64	8.57
F_BARRCONS_27	27	75.54	3:00	63.73	20:00	72.27	11.82	75.46	3:00	61.34	20:00	71.61	14.12	75.28	3:00	66.71	20:00	70.63	8.57
F_BARRCONS_28	28	75.54	3:00	63.71	20:00	72.26	11.83	75.46	3:00	61.32	20:00	71.61	14.14	75.28	3:00	66.71	20:00	70.63	8.57
F_BARRCONS_29	29	75.54	3:00	63.70	20:00	72.25	11.84	75.46	3:00	61.31	20:00	71.60	14.15	75.28	3:00	66.71	20:00	70.62	8.57
F_BARRCONS_30	30	75.54	3:00	63.69	20:00	72.25	11.85	75.46	3:00	61.30	20:00	71.60	14.16	75.27	3:00	66.71	20:00	70.62	8.56
F_BARRCONS_31	31	75.54	3:00	63.68	20:00	72.24	11.86	75.46	3:00	61.29	20:00	71.60	14.17	75.27	3:00	66.72	20:00	70.61	8.56
F_BARRCONS_32	32	75.54	3:00	63.68	20:00	72.24	11.86	75.46	3:00	61.28	20:00	71.60	14.18	75.27	3:00	66.72	20:00	70.61	8.55
F_BARRCONS_33	33	75.54	3:00	63.67	20:00	72.23	11.87	75.46	3:00	61.27	20:00	71.60	14.19	75.27	3:00	66.73	20:00	70.61	8.55
F_BARRCONS_34	34	75.54	3:00	63.65	20:00	72.22	11.89	75.46	3:00	61.25	20:00	71.59	14.21	75.27	3:00	66.81	20:00	70.61	8.46
F_BARRCONS_35	35	75.54	3:00	63.65	20:00	72.22	11.89	75.46	3:00	61.24	20:00	71.59	14.21	75.27	3:00	66.88	20:00	70.61	8.39
F_BARRCONS_36	36	75.54	3:00	63.64	20:00	72.21	11.89	75.46	3:00	61.24	20:00	71.59	14.22	75.27	3:00	66.86	20:00	70.60	8.41
F_BARRCONS_37	37	75.54	3:00	63.64	20:00	72.21	11.90	75.46	3:00	61.24	20:00	71.59	14.22	75.27	3:00	66.85	20:00	70.60	8.42
F_BARRCONS_38	38	75.54	3:00	63.64	20:00	72.21	11.90	75.46	3:00	61.23	20:00	71.59	14.22	75.27	3:00	66.84	20:00	70.60	8.43
F_BARRCONS_39	39	75.54	3:00	63.64	20:00	72.21	11.90	75.46	3:00	61.23	20:00	71.58	14.22	75.27	3:00	66.83	20:00	70.60	8.44
F_BARRCONS_40	40	75.54	3:00	63.64	20:00	72.21	11.90	75.46	3:00	61.23	20:00	71.59	14.22	75.27	3:00	66.78	20:00	70.60	8.49
F_BARRCONS_41	41	75.54	3:00	63.64	20:00	72.21	11.90	75.46	3:00	61.23	20:00	71.58	14.22	75.27	3:00	66.79	20:00	70.59	8.48
F_BARRCONS_42	42	75.54	3:00	63.64	20:00	72.21	11.90	75.46	3:00	61.23	20:00	71.58	14.22	75.27	3:00	66.80	20:00	70.59	8.47
F_BARRCONS_43	43	75.54	3:00	63.64	20:00	72.21	11.90	75.46	3:00	61.23	20:00	71.58	14.22	75.27	3:00	66.82	20:00	70.60	8.45
F_BARRCONS_44	44	75.54	3:00	63.70	20:00	72.25	11.84	75.46	3:00	61.30	20:00	71.60	14.16	75.28	3:00	66.77	20:00	70.63	8.51
F_BARRCONS_45	45	75.54	3:00	63.67	20:00	72.23	11.87	75.46	3:00	61.27	20:00	71.60	14.19	75.27	3:00	66.79	20:00	70.62	8.49
F_BARRCONS_46	46	75.54	3:00	63.66	20:00	72.23	11.88	75.46	3:00	61.26	20:00	71.60	14.20	75.27	3:00	66.80	20:00	70.61	8.47

MXDY+FF Model Results

	MIN						303.0							218.8							236.1	
	MAX						492.7							396.5							333.3	
Model Node ID	Figure Node ID	Servicing Alternative 1							Servicing Alternative 2a							Servicing Alternative 2b						
		Static Demand @ 6:00 (L/s)	Static Pressure @ 6:00 (psi)	Static Head @ 6:00 (m)	Fire-Flow Demand (L/s)	Residual Pressure (psi)	Available Flow at Hydrant (L/s)	Available Flow Pressure (psi)	Static Demand @ 6:00 (L/s)	Static Pressure @ 6:00 (psi)	Static Head @ 6:00 (m)	Fire-Flow Demand (L/s)	Residual Pressure (psi)	Available Flow at Hydrant (L/s)	Available Flow Pressure (psi)	Static Demand @ 6:00 (L/s)	Static Pressure @ 6:00 (psi)	Static Head @ 6:00 (m)	Fire-Flow Demand (L/s)	Residual Pressure (psi)	Available Flow at Hydrant (L/s)	Available Flow Pressure (psi)
F_BARRCONS_01	01	1.23	82.45	151.40	217.00	65.22	492.66	20.00	1.23	73.02	144.77	217.00	47.82	348.72	20.00	1.23	72.61	144.48	217.00	44.71	324.95	20.00
F_BARRCONS_02	02	1.23	82.44	151.39	217.00	62.16	438.32	20.00	1.23	72.93	144.70	217.00	42.43	307.95	20.00	1.23	72.60	144.47	217.00	42.21	307.03	20.00
F_BARRCONS_03	03	1.23	82.43	151.39	217.00	60.42	414.21	20.00	1.23	72.85	144.65	217.00	38.66	286.14	20.00	1.23	72.58	144.46	217.00	40.63	297.16	20.00
F_BARRCONS_04	04	1.23	82.43	151.39	217.00	59.86	407.27	20.00	1.23	72.80	144.61	217.00	36.67	276.21	20.00	1.23	72.58	144.45	217.00	40.05	293.76	20.00
F_BARRCONS_05	05	1.23	82.43	151.39	217.00	59.87	407.38	20.00	1.23	72.74	144.57	217.00	34.42	266.07	20.00	1.23	72.57	144.45	217.00	39.91	292.95	20.00
F_BARRCONS_06	06	1.23	82.38	151.35	217.00	59.74	408.68	20.00	1.23	72.64	144.50	217.00	31.89	255.93	20.00	1.23	72.56	144.44	217.00	41.94	305.86	20.00
F_BARRCONS_07	07	1.23	82.39	151.35	217.00	60.61	419.49	20.00	1.23	72.63	144.49	217.00	31.56	254.65	20.00	1.23	72.56	144.44	217.00	43.06	313.45	20.00
F_BARRCONS_08	08	1.23	82.39	151.36	217.00	61.37	429.79	20.00	1.23	72.63	144.49	217.00	31.38	253.98	20.00	1.23	72.57	144.45	217.00	44.04	320.51	20.00
F_BARRCONS_09	09	1.23	82.40	151.36	217.00	62.66	448.88	20.00	1.23	72.62	144.49	217.00	31.22	253.41	20.00	1.23	72.58	144.45	217.00	45.68	333.33	20.00
F_BARRCONS_10	10	1.23	82.40	151.36	217.00	60.88	422.35	20.00	1.23	72.62	144.48	217.00	29.02	245.21	20.00	1.23	72.57	144.45	217.00	43.22	314.36	20.00
F_BARRCONS_11	11	1.23	82.40	151.36	217.00	58.77	396.01	20.00	1.23	72.61	144.48	217.00	26.50	236.73	20.00	1.23	72.56	144.44	217.00	40.57	296.97	20.00
F_BARRCONS_12	12	1.23	82.40	151.36	217.00	56.46	372.06	20.00	1.23	72.61	144.48	217.00	23.77	228.42	20.00	1.23	72.56	144.44	217.00	37.75	281.20	20.00
F_BARRCONS_13	13	1.23	82.40	151.37	217.00	46.56	303.01	20.00	1.23	73.36	145.01	217.00	52.91	396.48	20.00	1.23	72.57	144.45	217.00	26.45	236.07	20.00
F_BARRCONS_14	14	1.23	82.40	151.37	217.00	50.78	327.64	20.00	1.23	73.26	144.93	217.00	51.39	380.54	20.00	1.23	72.57	144.45	217.00	30.67	250.32	20.00
F_BARRCONS_15	15	1.23	82.40	151.37	217.00	53.30	345.49	20.00	1.23	73.20	144.89	217.00	50.58	372.69	20.00	1.23	72.57	144.45	217.00	33.19	260.19	20.00
F_BARRCONS_16	16	1.23	82.40	151.37	217.00	55.74	365.66	20.00	1.23	73.15	144.86	217.00	49.87	366.14	20.00	1.23	72.57	144.45	217.00	35.63	270.88	20.00
F_BARRCONS_17	17	1.23	82.41	151.37	217.00	58.28	390.68	20.00	1.23	73.10	144.82	217.00	49.19	360.24	20.00	1.23	72.57	144.45	217.00	38.17	283.45	20.00
F_BARRCONS_18	18	1.23	82.41	151.37	217.00	60.70	419.58	20.00	1.23	73.06	144.79	217.00	48.61	355.39	20.00	1.23	72.58	144.45	217.00	40.59	297.10	20.00
F_BARRCONS_19	19	1.23	82.42	151.37	217.00	63.56	463.19	20.00	1.23	73.02	144.76	217.00	48.00	350.45	20.00	1.23	72.58	144.46	217.00	43.45	315.98	20.00
F_BARRCONS_20	20	1.23	82.40	151.37	217.00	62.44	445.23	20.00	1.23	72.97	144.73	217.00	45.79	332.15	20.00	1.23	72.57	144.45	217.00	42.59	310.07	20.00
F_BARRCONS_21	21	1.23	82.40	151.36	217.00	61.45	430.76	20.00	1.23	72.93	144.70	217.00	43.90	318.24	20.00	1.23	72.56	144.44	217.00	41.81	304.98	20.00
F_BARRCONS_22	22	1.23	82.39	151.36	217.00	60.57	419.04	20.00	1.23	72.88	144.67	217.00	42.20	306.94	20.00	1.23	72.56	144.44	217.00	41.12	300.66	20.00
F_BARRCONS_23	23	1.23	82.38	151.35	217.00	59.90	410.67	20.00	1.23	72.85	144.65	217.00	40.83	298.60	20.00	1.23	72.55	144.44	217.00	40.59	297.50	20.00
F_BARRCONS_24	24	1.23	82.38	151.35	217.00	59.33	403.87	20.00	1.23	72.82	144.62	217.00	39.57	291.43	20.00	1.23	72.55	144.43	217.00	40.16	294.91	20.00
F_BARRCONS_25	25	1.23	82.38	151.35	217.00	58.86	398.54	20.00	1.23	72.79	144.60	217.00	38.43	285.31	20.00	1.23	72.55	144.43	217.00	39.81	292.91	20.00
F_BARRCONS_26	26	1.23	82.38	151.35	217.00	58.48	394.41	20.00	1.23	72.76	144.58	217.00	37.35	279.87	20.00	1.23	72.55	144.43	217.00	39.55	291.44	20.00
F_BARRCONS_27	27	1.23	82.37	151.35	217.00	58.23	391.67	20.00	1.23	72.74	144.57	217.00	36.43	275.40	20.00	1.23	72.55	144.43	217.00	39.40	290.58	20.00
F_BARRCONS_28	28	1.23	82.37	151.35	217.00	58.08	390.07	20.00	1.23	72.72	144.55	217.00	35.59	271.50	20.00	1.23	72.55	144.43	217.00	39.34	290.25	20.00
F_BARRCONS_29	29	1.23	82.37	151.35	217.00	58.03	389.50	20.00	1.23	72.70	144.54	217.00	34.82	268.03	20.00	1.23	72.55	144.43	217.00	39.39	290.50	20.00
F_BARRCONS_30	30	1.23	82.37	151.35	217.00	58.07	389.96	20.00	1.23	72.68	144.53	217.00	34.17	265.20	20.00	1.23	72.55	144.43	217.00	39.53	291.29	20.00
F_BARRCONS_31	31	1.23	82.37	151.35	217.00	58.21	391.38	20.00	1.23	72.67	144.52	217.00	33.59	262.75	20.00	1.23	72.55	144.43	217.00	39.78	292.70	20.00
F_BARRCONS_32	32	1.23	82.38	151.35	217.00	58.45	393.89	20.00	1.23	72.66	144.51	217.00	33.06	260.58	20.00	1.23	72.55	144.43	217.00	40.14	294.83	20.00
F_BARRCONS_33	33	1.23	82.38	151.35	217.00	58.79	397.66	20.00	1.23	72.65	144.51	217.00	32.60	258.70	20.00	1.23	72.55	144.43	217.00	40.64	297.78	20.00
F_BARRCONS_34	34	1.23	82.43	151.39	217.00	64.31	475.90	20.00	1.23	72.63	144.49	217.00	31.29	253.65	20.00	1.23	72.56	144.44	217.00	43.76	318.55	20.00
F_BARRCONS_35	35	1.23	82.46	151.41	217.00	64.94	486.74	20.00	1.23	72.62	144.48	217.00	28.93	244.89	20.00	1.23	72.56	144.44	217.00	41.72	304.38	20.00
F_BARRCONS_36	36	1.23	82.45	151.40	217.00	62.29	440.70	20.00	1.23	72.61	144.48	217.00	26.94	238.15	20.00	1.23	72.55	144.44	217.00	39.94	293.44	20.00
F_BARRCONS_37	37	1.23	82.44	151.39	217.00	60.38	414.33	20.00	1.23	72.61	144.48	217.00	25.40	233.27	20.00	1.23	72.55	144.44	217.00	38.54	285.60	20.00
F_BARRCONS_38	38	1.23	82.43	151.38	217.00	58.60	393.27	20.00	1.23	72.61	144.47	217.00	23.92	228.85	20.00	1.23	72.55	144.43	217.00	37.20	278.57	20.00
F_BARRCONS_39	39	1.23	82.42	151.38	217.00	56.93	376.14	20.00	1.23	72.60	144.47	217.00	22.53	224.91	20.00	1.23	72.55	144.43	217.00	35.94	272.42	20.00
F_BARRCONS_40	40	1.23	82.40	151.36	217.00	55.06	359.46	20.00	1.23	72.61	144.47	217.00	22.09	223.70	20.00	1.23	72.55	144.44	217.00	36.00	272.60	20.00
F_BARRCONS_41	41	1.23	82.40	151.36	217.00	53.85	349.45	20.00	1.23	72.60	144.47	217.00	20.44	219.35	20.00	1.23	72.55	144.43	217.00	34.25	264.73	20.00
F_BARRCONS_42	42	1.23	82.41	151.37	217.00	53.93	350.01	20.00	1.23	72.60	144.47	217.00	20.23	218.80	20.00	1.23	72.55	144.43	217.00	33.95	263.41	20.00
F_BARRCONS_43	43	1.23	82.42	151.37	217.00	55.54	363.30	20.00	1.23	72.60	144.47	217.00	21.38	221.81	20.00	1.23	72.55	144.43	217.00	34.91	267.68	20.00
F_BARRCONS_44	44	1.23	82.43	151.39	217.00	60.56	416.31	20.00	1.23	72.70	144.54	217.00	32.99	260.16	20.00	1.23	72.57	144.45	217.00	40.46	296.30	20.00
F_BARRCONS_45	45	1.23	82.43	151.39	217.00	61.91	435.13	20.00	1.23	72.66	144.51	217.00	31.98	256.22	20.00	1.23	72.56	144.45	217.00	41.65	303.81	20.00
F_BARRCONS_46	46	1.23	82.43	151.39	217.00	62.94	451.40	20.00	1.23	72.64	144.50	217.00	31.59	254.74	20.00	1.23	72.56	144.44	217.00	42.57	309.97	20.00

MXDY+FF Model Results (cont'd)

	MIN						*235.1*							*281.2*							*274.7*	
	MAX						*438.9*							*411.4*							*539.8*	
Model Node ID	Figure Node ID	Servicing Alternative 2c							Servicing Alternative 2d							Servicing Alternative 3						
		Static Demand @ 6:00 (L/s)	Static Pressure @ 6:00 (psi)	Static Head @ 6:00 (m)	Fire-Flow Demand (L/s)	Residual Pressure (psi)	Available Flow at Hydrant (L/s)	Available Flow Pressure (psi)	Static Demand @ 6:00 (L/s)	Static Pressure @ 6:00 (psi)	Static Head @ 6:00 (m)	Fire-Flow Demand (L/s)	Residual Pressure (psi)	Available Flow at Hydrant (L/s)	Available Flow Pressure (psi)	Static Demand @ 6:00 (L/s)	Static Pressure @ 6:00 (psi)	Static Head @ 6:00 (m)	Fire-Flow Demand (L/s)	Residual Pressure (psi)	Available Flow at Hydrant (L/s)	Available Flow Pressure (psi)
F_BARRCONS_01	01	1.23	73.27	144.94	217.00	53.88	411.59	20.00	1.23	72.83	144.63	217.00	48.89	357.13	20.00	1.23	68.30	141.44	217.00	54.20	443.36	20.00
F_BARRCONS_02	02	1.23	73.19	144.88	217.00	48.40	350.55	20.00	1.23	72.81	144.62	217.00	46.37	334.36	20.00	1.23	68.20	141.38	217.00	52.58	417.07	20.00
F_BARRCONS_03	03	1.23	73.10	144.82	217.00	44.60	320.45	20.00	1.23	72.79	144.60	217.00	44.81	322.29	20.00	1.23	68.11	141.31	217.00	51.74	404.95	20.00
F_BARRCONS_04	04	1.23	73.06	144.79	217.00	42.59	307.23	20.00	1.23	72.78	144.60	217.00	44.28	318.41	20.00	1.23	68.06	141.28	217.00	51.61	403.52	20.00
F_BARRCONS_05	05	1.23	72.99	144.75	217.00	40.33	294.01	20.00	1.23	72.78	144.59	217.00	44.23	318.14	20.00	1.23	67.99	141.23	217.00	52.07	408.90	20.00
F_BARRCONS_06	06	1.23	72.89	144.67	217.00	37.78	281.12	20.00	1.23	72.77	144.59	217.00	46.53	336.61	20.00	1.23	67.87	141.14	217.00	52.49	416.19	20.00
F_BARRCONS_07	07	1.23	72.88	144.67	217.00	37.45	279.52	20.00	1.23	72.77	144.59	217.00	47.49	344.99	20.00	1.23	67.87	141.14	217.00	53.53	430.30	20.00
F_BARRCONS_08	08	1.23	72.88	144.67	217.00	37.27	278.69	20.00	1.23	72.78	144.59	217.00	48.33	352.86	20.00	1.23	67.86	141.14	217.00	54.47	444.31	20.00
F_BARRCONS_09	09	1.23	72.88	144.66	217.00	37.11	277.99	20.00	1.23	72.78	144.60	217.00	49.74	367.17	20.00	1.23	67.86	141.14	217.00	56.10	471.46	20.00
F_BARRCONS_10	10	1.23	72.87	144.66	217.00	34.91	267.61	20.00	1.23	72.77	144.59	217.00	47.29	343.07	20.00	1.23	67.86	141.13	217.00	54.47	442.40	20.00
F_BARRCONS_11	11	1.23	72.87	144.66	217.00	32.39	257.01	20.00	1.23	72.77	144.59	217.00	44.64	321.43	20.00	1.23	67.85	141.13	217.00	52.50	413.56	20.00
F_BARRCONS_12	12	1.23	72.86	144.65	217.00	29.66	246.78	20.00	1.23	72.76	144.58	217.00	41.82	302.25	20.00	1.23	67.84	141.12	217.00	50.35	387.47	20.00
F_BARRCONS_13	13	1.23	73.53	145.12	217.00	56.33	438.89	20.00	1.23	73.23	144.91	217.00	54.17	411.41	20.00	1.23	68.20	141.38	217.00	36.17	274.69	20.00
F_BARRCONS_14	14	1.23	73.45	145.07	217.00	55.37	426.51	20.00	1.23	73.11	144.83	217.00	52.87	396.55	20.00	1.23	68.20	141.38	217.00	40.39	297.87	20.00
F_BARRCONS_15	15	1.23	73.40	145.03	217.00	54.90	420.96	20.00	1.23	73.05	144.78	217.00	52.19	389.38	20.00	1.23	68.20	141.38	217.00	42.91	314.77	20.00
F_BARRCONS_16	16	1.23	73.37	145.01	217.00	54.52	416.78	20.00	1.23	72.99	144.74	217.00	51.60	383.50	20.00	1.23	68.20	141.38	217.00	45.35	333.95	20.00
F_BARRCONS_17	17	1.23	73.33	144.98	217.00	54.19	413.50	20.00	1.23	72.93	144.71	217.00	51.06	378.34	20.00	1.23	68.21	141.38	217.00	47.89	357.86	20.00
F_BARRCONS_18	18	1.23	73.30	144.96	217.00	53.94	411.33	20.00	1.23	72.89	144.67	217.00	50.61	374.21	20.00	1.23	68.21	141.38	217.00	50.31	385.71	20.00
F_BARRCONS_19	19	1.23	73.27	144.94	217.00	53.72	409.85	20.00	1.23	72.84	144.64	217.00	50.14	370.18	20.00	1.23	68.21	141.39	217.00	53.17	428.11	20.00
F_BARRCONS_20	20	1.23	73.22	144.91	217.00	51.57	383.38	20.00	1.23	72.82	144.63	217.00	49.02	358.69	20.00	1.23	68.17	141.35	217.00	52.47	417.33	20.00
F_BARRCONS_21	21	1.23	73.18	144.88	217.00	49.70	363.70	20.00	1.23	72.81	144.62	217.00	48.01	349.14	20.00	1.23	68.13	141.33	217.00	51.84	408.28	20.00
F_BARRCONS_22	22	1.23	73.14	144.85	217.00	48.02	348.06	20.00	1.23	72.80	144.61	217.00	47.11	341.21	20.00	1.23	68.09	141.30	217.00	51.30	400.80	20.00
F_BARRCONS_23	23	1.23	73.10	144.82	217.00	46.66	336.71	20.00	1.23	72.79	144.60	217.00	46.42	335.46	20.00	1.23	68.06	141.28	217.00	50.89	395.50	20.00
F_BARRCONS_24	24	1.23	73.07	144.80	217.00	45.41	327.09	20.00	1.23	72.78	144.60	217.00	45.83	330.74	20.00	1.23	68.03	141.25	217.00	50.55	391.30	20.00
F_BARRCONS_25	25	1.23	73.04	144.78	217.00	44.28	318.97	20.00	1.23	72.78	144.60	217.00	45.35	327.01	20.00	1.23	68.00	141.24	217.00	50.29	388.25	20.00
F_BARRCONS_26	26	1.23	73.01	144.76	217.00	43.21	311.81	20.00	1.23	72.77	144.59	217.00	44.97	324.11	20.00	1.23	67.98	141.22	217.00	50.12	386.22	20.00
F_BARRCONS_27	27	1.23	72.99	144.74	217.00	42.30	306.00	20.00	1.23	72.77	144.59	217.00	44.71	322.21	20.00	1.23	67.96	141.20	217.00	50.03	385.34	20.00
F_BARRCONS_28	28	1.23	72.97	144.73	217.00	41.46	300.94	20.00	1.23	72.77	144.59	217.00	44.56	321.11	20.00	1.23	67.94	141.19	217.00	50.02	385.47	20.00
F_BARRCONS_29	29	1.23	72.95	144.72	217.00	40.69	296.47	20.00	1.23	72.77	144.59	217.00	44.52	320.85	20.00	1.23	67.92	141.18	217.00	50.11	386.70	20.00
F_BARRCONS_30	30	1.23	72.94	144.71	217.00	40.05	292.86	20.00	1.23	72.77	144.59	217.00	44.60	321.38	20.00	1.23	67.91	141.17	217.00	50.27	388.93	20.00
F_BARRCONS_31	31	1.23	72.92	144.70	217.00	39.47	289.73	20.00	1.23	72.77	144.59	217.00	44.77	322.66	20.00	1.23	67.90	141.16	217.00	50.51	392.30	20.00
F_BARRCONS_32	32	1.23	72.91	144.69	217.00	38.95	286.98	20.00	1.23	72.77	144.59	217.00	45.05	324.78	20.00	1.23	67.89	141.16	217.00	50.86	396.88	20.00
F_BARRCONS_33	33	1.23	72.90	144.68	217.00	38.48	284.60	20.00	1.23	72.77	144.59	217.00	45.45	327.87	20.00	1.23	67.88	141.15	217.00	51.31	401.96	20.00
F_BARRCONS_34	34	1.23	72.88	144.67	217.00	37.18	278.30	20.00	1.23	72.77	144.59	217.00	47.96	349.54	20.00	1.23	67.86	141.14	217.00	58.19	511.76	20.00
F_BARRCONS_35	35	1.23	72.87	144.66	217.00	34.82	267.20	20.00	1.23	72.76	144.58	217.00	45.89	331.47	20.00	1.23	67.86	141.13	217.00	59.57	539.78	20.00
F_BARRCONS_36	36	1.23	72.87	144.66	217.00	32.83	258.79	20.00	1.23	72.76	144.58	217.00	44.10	317.79	20.00	1.23	67.85	141.13	217.00	56.82	477.17	20.00
F_BARRCONS_37	37	1.23	72.86	144.65	217.00	31.29	252.75	20.00	1.23	72.76	144.58	217.00	42.70	308.11	20.00	1.23	67.85	141.13	217.00	54.88	443.50	20.00
F_BARRCONS_38	38	1.23	72.86	144.65	217.00	29.81	247.32	20.00	1.23	72.75	144.58	217.00	41.34	299.52	20.00	1.23	67.84	141.12	217.00	53.06	417.44	20.00
F_BARRCONS_39	39	1.23	72.86	144.65	217.00	28.42	242.51	20.00	1.23	72.75	144.58	217.00	40.07	292.05	20.00	1.23	67.84	141.12	217.00	51.36	396.64	20.00
F_BARRCONS_40	40	1.23	72.86	144.65	217.00	27.98	241.02	20.00	1.23	72.76	144.58	217.00	40.08	291.95	20.00	1.23	67.84	141.12	217.00	49.07	372.57	20.00
F_BARRCONS_41	41	1.23	72.86	144.65	217.00	26.33	235.76	20.00	1.23	72.75	144.58	217.00	38.35	282.65	20.00	1.23	67.84	141.12	217.00	48.02	360.62	20.00
F_BARRCONS_42	42	1.23	72.86	144.65	217.00	26.12	235.09	20.00	1.23	72.75	144.58	217.00	38.05	281.16	20.00	1.23	67.84	141.12	217.00	48.19	362.40	20.00
F_BARRCONS_43	43	1.23	72.86	144.65	217.00	27.27	238.74	20.00	1.23	72.75	144.58	217.00	39.04	286.32	20.00	1.23	67.84	141.12	217.00	49.92	381.16	20.00
F_BARRCONS_44	44	1.23	72.95	144.72	217.00	38.89	286.46	20.00	1.23	72.77	144.59	217.00	44.83	322.66	20.00	1.23	67.94	141.19	217.00	53.10	422.12	20.00
F_BARRCONS_45	45	1.23	72.91	144.69	217.00	37.88	281.48	20.00	1.23	72.77	144.59	217.00	45.98	331.85	20.00	1.23	67.90	141.16	217.00	54.89	448.52	20.00
F_BARRCONS_46	46	1.23	72.89	144.68	217.00	37.48	279.64	20.00	1.23	72.77	144.59	217.00	46.84	339.26	20.00	1.23	67.88	141.15	217.00	56.28	472.74	20.00

Kennedy-Burnett Potable Water Master Servicing Study

Stantec

Prepared for:
City of Ottawa
100 Constellation Crescent
Ottawa, ON K2G 6G8

Prepared by:
Stantec Consulting Ltd.
400-1331 Clyde Avenue
Ottawa, ON K2C 3G4

File No. 1634-01221

April 29, 2014

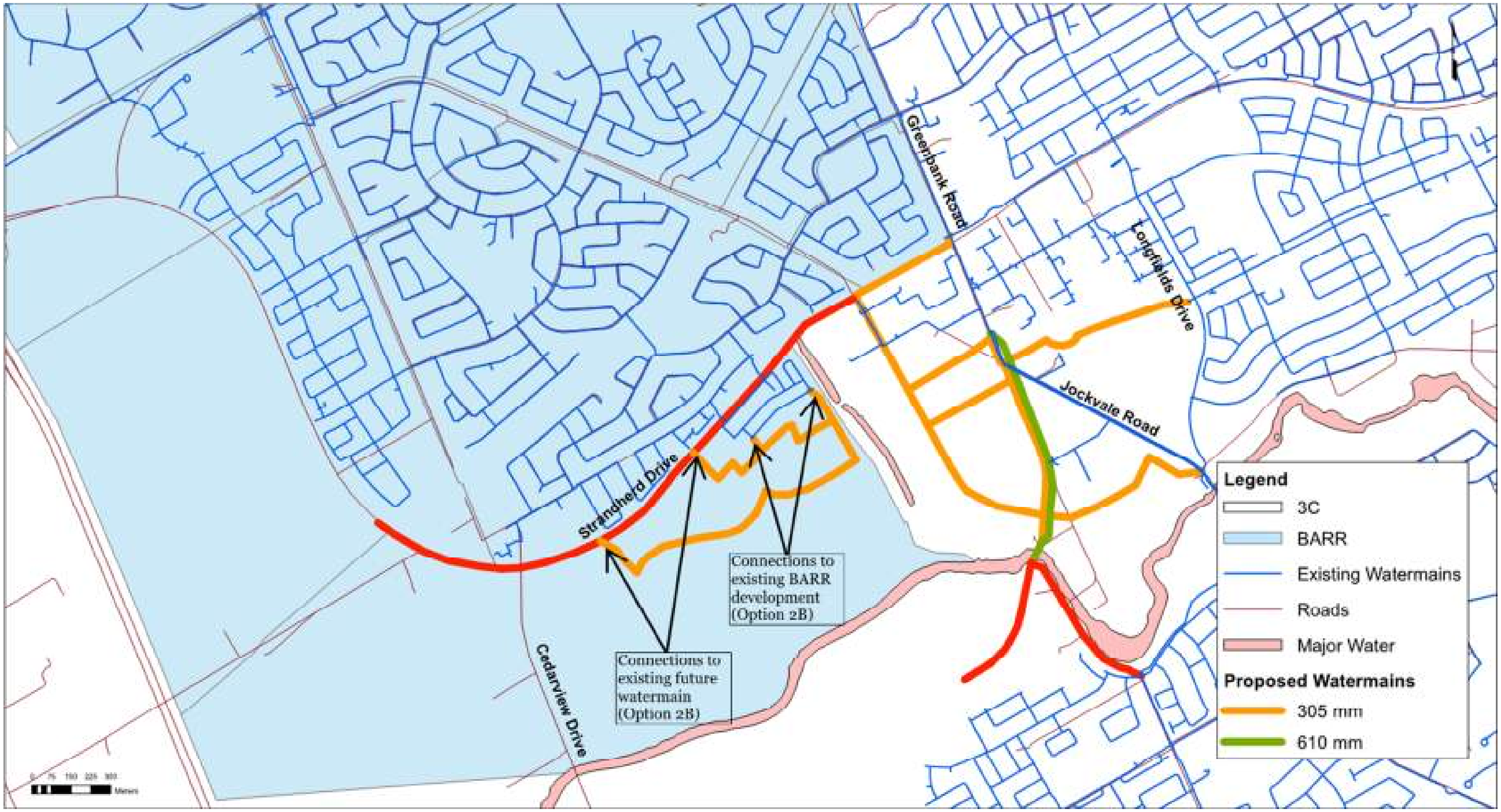
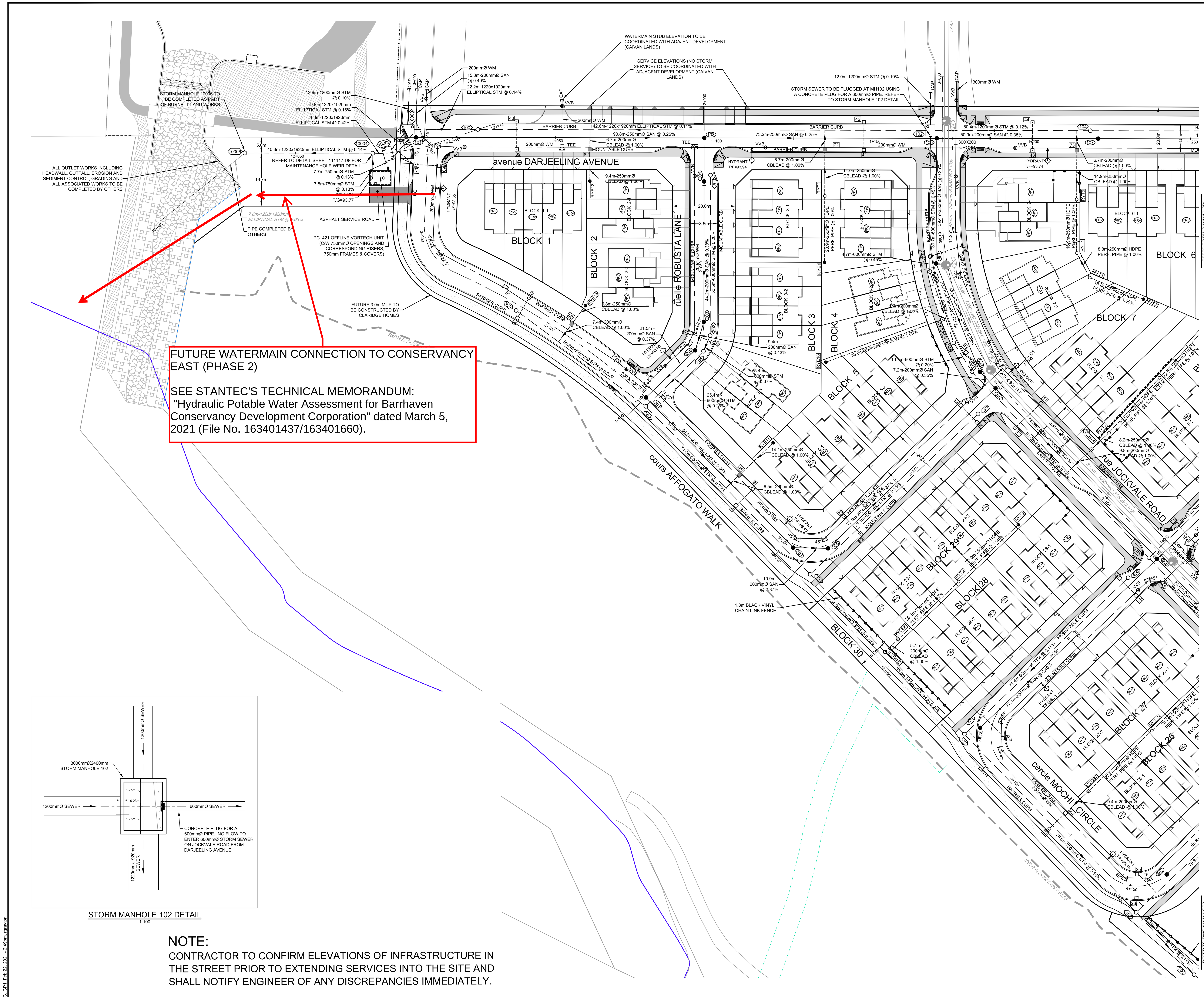
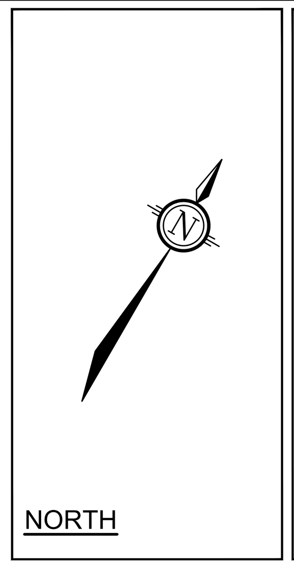
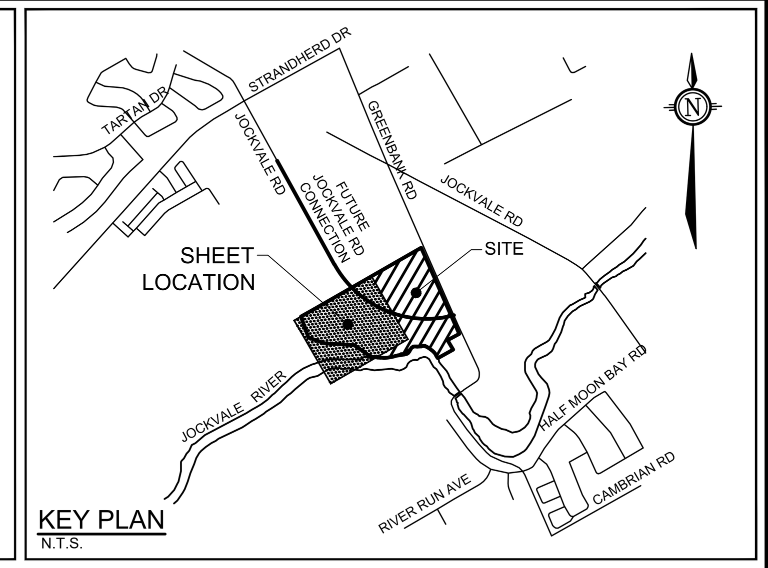


Figure 2-6: Proposed Pipe Layout Post Zone Reconfiguration – Scenario 2B







STORM MANHOLE 102 DETAIL
1:100

NOTE:
CONTRACTOR TO CONFIRM ELEVATIONS OF INFRASTRUCTURE IN THE STREET PRIOR TO EXTENDING SERVICES INTO THE SITE AND SHALL NOTIFY ENGINEER OF ANY DISCREPANCIES IMMEDIATELY.

CATCHBASIN TABLE

CB No.	STATION	T/G ELEVATION	INVERT	ICD DIA.	FLOW RATE (L/s)	HEAD (m)
CBMH1	6+055.96	93.55	90.37			
1	3+090.33	93.10	91.50	83mm ORIFICE SLIDE TYPE	38	1.56
2	3+090.33	93.10	91.50	83mm ORIFICE SLIDE TYPE	38	1.56
3	3+182.44	93.10	91.50	83mm ORIFICE SLIDE TYPE	38	1.56
4	3+182.43	93.10	91.50	83mm ORIFICE SLIDE TYPE	38	1.56
5	3+275.78	93.18	91.57	94mm ORIFICE SLIDE TYPE	50	1.65
6	3+275.78	93.18	91.57	94mm ORIFICE SLIDE TYPE	50	1.65
7	2+072.65	93.17	91.57	102mm ORIFICE SLIDE TYPE	58	1.55
8	2+073.33	93.21	91.61	102mm ORIFICE SLIDE TYPE	58	1.55
9	6+054.11	93.49	91.66	94mm ORIFICE SLIDE TYPE	25	1.63
11	6+114.05	93.41	91.53	102mm ORIFICE SLIDE TYPE	50	1.68
12	6+114.05	93.43	91.53	83mm ORIFICE SLIDE TYPE	50	1.68
19	4+019.25	92.92	91.24	83mm ORIFICE SLIDE TYPE	39	1.64
20	4+019.25	92.92	91.24	83mm ORIFICE SLIDE TYPE	39	1.64
21	4+085.15	92.72	91.13	83mm ORIFICE SLIDE TYPE	39	1.63
22	4+085.15	92.72	91.05	83mm ORIFICE SLIDE TYPE	39	1.63
23	4+118.88	92.69	91.20	83mm ORIFICE SLIDE TYPE	39	1.54
24	4+118.88	92.69	91.20	83mm ORIFICE SLIDE TYPE	39	1.54
25	4+152.04	92.73	91.13	83mm ORIFICE SLIDE TYPE	40	1.65
26	4+152.04	92.73	91.04	83mm ORIFICE SLIDE TYPE	40	1.65
39	1+037.78	93.28	91.47	102mm ORIFICE SLIDE TYPE	56	1.75
40	1+037.78	93.42	91.47	94mm ORIFICE SLIDE TYPE	56	1.75
41	1+147.13	93.44	91.75	83mm ORIFICE SLIDE TYPE	39	1.65
42	1+147.13	93.59	91.75	83mm ORIFICE SLIDE TYPE	39	1.65
43	1+200.23	93.40	91.72	94mm ORIFICE SLIDE TYPE	50	1.63
44	1+200.24	93.55	91.72	94mm ORIFICE SLIDE TYPE	50	1.63
69	3+028.31	93.33	91.61	83mm ORIFICE SLIDE TYPE	41	1.76
70	3+028.31	93.32	91.52	83mm ORIFICE SLIDE TYPE	41	1.76
79	3+225	93.15	91.55	83mm ORIFICE SLIDE TYPE	38	1.56
80	3+225	93.15	91.55	83mm ORIFICE SLIDE TYPE	38	1.56
81	6+087.01	93.51	91.91	83mm ORIFICE SLIDE TYPE	6	1.56

NOTE:
TOP OF GRATE ELEVATIONS ARE EDGE OF PAVEMENT GRADES FOR ROADSIDE CATCHBASINS AND TOP OF FRAME AND COVER FOR CURB INLET CATCHBASINS.

REAR YARD CATCHBASIN TABLE

RYCB No.	T/G ELEVATION	INVERT	ICD DIA.	FLOW RATE (L/s)	HEAD (m)
RYE16	93.44	91.76		0	0.00
RYE1	93.56	91.75		0	0.00
RYT1	93.72	91.55		0	0.00
RYE14	93.59	92.03		0	0.00
RYE13	93.65	92.00		0	0.00
RYT5	93.70	91.92		0	0.00
RYT4	93.76	92.09		0	0.00
RYE3	93.55	92.35		0	0.00
RYCB6	93.22	91.11	83mm ORIFICE SLIDE TYPE	23	2.37
RYT2	93.23	91.37			
RYE2	93.28	91.63			
RYE15	93.43	91.96			
RYCB7	93.19	91.29			
RYT10	93.21	91.57			
RYT6	93.45	91.55			
RYT7	93.44	91.32			
RYT3	93.72	92.17			
RYCB74	93.55	91.24	127mm ORIFICE SLIDE TYPE		
RYCB85	93.70	91.07	152mm ORIFICE SLIDE TYPE		
72	93.53	91.41	102mm ORIFICE SLIDE TYPE		
73	93.51	91.77	127mm ORIFICE SLIDE TYPE		
82	93.48	91.61	83mm ORIFICE SLIDE TYPE		
84	93.14	91.52	94mm ORIFICE SLIDE TYPE		
88	93.19	91.66	94mm ORIFICE SLIDE TYPE		

NOTE:
SERVICE LATERALS UNDER GARAGE SHALL BE INSTALLED WITH SLEEVE.

NOTE:
THE POSITION OF ALL POLE LINES, CONDUITS, WATERMAINS, SEWERS AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS, AND WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. BEFORE STARTING WORK, DETERMINE THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES AND ASSUME ALL LIABILITY FOR DAMAGE TO THEM.

No.	REVISION	mm/dd/yy	BY	No.	REVISION	mm/dd/yy	BY	No.	REVISION	mm/dd/yy	BY
				16	ISSUED FOR SERVICING CONSTRUCTION	FEB 1/21	SAZ	8	ISSUED FOR TENDER	OCT 16/20	SAZ
				15	ISSUED FOR COMMENCE WORK NOTICE	JAN 29/21	SAZ	7	REVISED AS PER CITY OF OTTAWA COMMENTS	OCT 9/20	SAZ
				14	ISSUED FOR ORDERING PIPE MATERIALS	DEC 4/20	SAZ	6	REVISED AS PER CITY OF OTTAWA COMMENTS	AUG 24/20	SAZ
				13	REVISED SIZES FOR MANHOLES 102,10000,10002,10004	DEC 4/20	SAZ	5	ISSUED FOR CITY OF OTTAWA REVIEW	JUNE 22/20	SAZ
				12	ISSUED FOR ECA APPROVAL	NOV 19/20	SAZ	4	ISSUED FOR DISCUSSION PURPOSES ONLY	JULY 12/19	SAZ
				11	ISSUED TO GEOTECHNICAL CONSULTANT FOR REVIEW	NOV 4/20	SAZ	3	REISSUED WITH DRAFT PLAN OF SUBDIVISION	MAY 29/19	MSP
18	ISSUED WITH CCN No.3	FEB 22/21	SAZ	10	ISSUED FOR ADDENDUM NO.3	OCT 30/20	SAZ	2	REISSUED WITH DRAFT PLAN OF SUBDIVISION	MAY 23/18	MSP
17	ISSUED WITH SITE INSTRUCTION NO.3	FEB 11/21	SAZ	9	ISSUED FOR ADDENDUM NO.1	OCT 23/20	SAZ	1	REISSUED WITH DRAFT PLAN OF SUBDIVISION	JAN 26/18	MSP

SCALE
1:500
1:500
0 5 10 15 20

DESIGN SAZ
CHECKED DDB
DRAWN RBG
CHECKED DDB
APPROVED MSP

NOVATECH
Engineers, Planners & Landscape Architects
Suite 200, 240 Michael Cowpland Drive
Ottawa, Ontario, Canada K2M 1P6
Telephone (613) 254-9643
Facsimile (613) 254-5867
Website www.novatech-eng.com

CITY OF OTTAWA
BURNETT LANDS
3370 GREENBANK ROAD

DRAWING NAME
GENERAL PLAN OF SERVICES

PROJECT No. 111117
REV REV # 18
DRAWING No. 111117-GP1

PLANB1.DWG - 1000mmx707mm

D07-16-17-0001

#18179

DVIEW 51.17°

Kevin Murphy

From:	Shillington, Jeffrey <jeff.shillington@ottawa.ca>
Sent:	Friday, March 12, 2021 9:54 AM
To:	Kevin Murphy
Cc:	Steve Pichette; Marc Pichette; Hugo Lalonde (hugo.lalonde@caivan.com); Sevigny, John; vincent.denomme@claridgehomes.com; Marc St.Pierre; Julio DaSilva (Julio.DaSilva@caivan.com); Varghese, Renjit
Subject:	RE: Barrhaven Conservancy - future water connection to Claridge development

EXTERNAL E-MAIL - Do not click links or open attachments unless you recognize the sender.

Kevin,

As per my voicemail, I spoke to Renjit in Water Distribution this morning and he has no concerns with the proposal given that the anticipated timing of construction for Caivan is the fall of this year. We would be looking for the T coming off Claridge's 200 mm dia. watermain with a valve on the property line, with one length of pipe after the valve then capped.

I did speak to John Sevigny about this as well and he had no concerns.

It is assumed that this additional work will be at Caivan's expense.

Let me know if you require any additional information.

Regards,

Jeff Shillington, P.Eng.
Senior Project Manager, Development Review, South Branch
Planning, Infrastructure and Economic Development
City of Ottawa
tel: 580-2424 x 16960
email: jeff.shillington@ottawa.ca

From: Kevin Murphy <KMurphy@dsel.ca>
Sent: March 11, 2021 11:54 AM
To: Shillington, Jeffrey <jeff.shillington@ottawa.ca>
Cc: Steve Pichette <spichette@dsel.ca>; Marc Pichette <MPichette@dsel.ca>; Hugo Lalonde (hugo.lalonde@caivan.com) <hugo.lalonde@caivan.com>; Sevigny, John <John.Sevigny@ottawa.ca>; vincent.denomme@claridgehomes.com; Marc St.Pierre <m.stpierre@novatech-eng.com>; Julio DaSilva (Julio.DaSilva@caivan.com) <Julio.DaSilva@caivan.com>
Subject: RE: Barrhaven Conservancy - future water connection to Claridge development
Importance: High

CAUTION: This email originated from an External Sender. Please do not click links or open attachments unless you recognize the source.

Hi Jeff,

ATTENTION : Ce courriel provient d’un expéditeur externe. Ne cliquez sur aucun lien et n’ouvrez pas de pièce jointe, excepté si vous connaissez l’expéditeur.

Just following up with the email chain below.
Firstly, I would like to apologize for not including John Sevigny on the coordination below. I presume that you have but I should have kept him apprised of the proposal (I had reached out to him in the past about this).

By way of this email I would ask for you to confirm for Vincent at Claridge that the City is ok with moving forward with this proposed future connection point to the 200mm watermain within the Claridge development (screenshot below).
Time is of the essence given the construction progress being made on site by the contractor and the desire to facilitate this prior to commissioning of the watermain.

Hugo will continue to reach out to Vincent to coordinate any logistics between their teams to facilitate this work.

Kevin

DSEL
david schaeffer engineering ltd.
phone: (613) 836-0856 ext.563
cell: (613) 324-8361
email: kmurphy@DSEL.ca

From: Kevin Murphy
Sent: Wednesday, March 10, 2021 10:14 AM
To: 'Shillington, Jeffrey' <jeff.shillington@ottawa.ca>
Cc: Steve Pichette <SPichette@dsel.ca>; Marc Pichette <MPichette@dsel.ca>
Subject: RE: Barrhaven Conservancy - future water connection to Claridge development
Importance: High

Hi Jeff,

The timing to install the tee would be as soon as possible while the contractor is active on site and hopefully before the watermain is chlorinated etc.
Timing for Conservancy’s first phase of construction would also be as soon as possible depending on draft plan approval and servicing design/approval timelines.
The desire would be to start servicing construction in autumn of this year.

Agreed that a tee with a valve (close to the tee given there are no other services in the roadway – minimizes extent of water in the line) and extended/capped to just out of the ROW.

How best do you want this update/revision facilitated?

CONTEMPLATED CHANGE NOTICE (CCN) NO. 4

TO:	Thomas Cavanagh Construction Limited
DISTRIBUTION:	Nigel Madden, Cavanagh Jonathon Blake, Cavanagh Vincent Denomme, Claridge Steve Zorgel, Novatech
PROJECT:	Burnett Lands
CONTRACT NO.:	111117-01
ISSUED BY:	Marc St. Pierre
DATE:	March 18, 2021

The purpose of this contemplated change notice is to give notice of a considered change in the work for which a price must be established and approved by Change Order before the work involved is undertaken. Please respond within 7 working days of the date of this notice.

The following work is proposed as a change of scope to the contract:

SCOPE OF WORK:

1. To accommodate future development to the west of the Burnett Lands, a 200mm dia. watermain stub is to be installed within the north storm sewer servicing block. The attached figure illustrates the location and elevation of the watermain stub. The service shall be installed 2.0m past the proposed service road.

QUOTATION:

1. Contractor shall complete the work on a time and material basis.

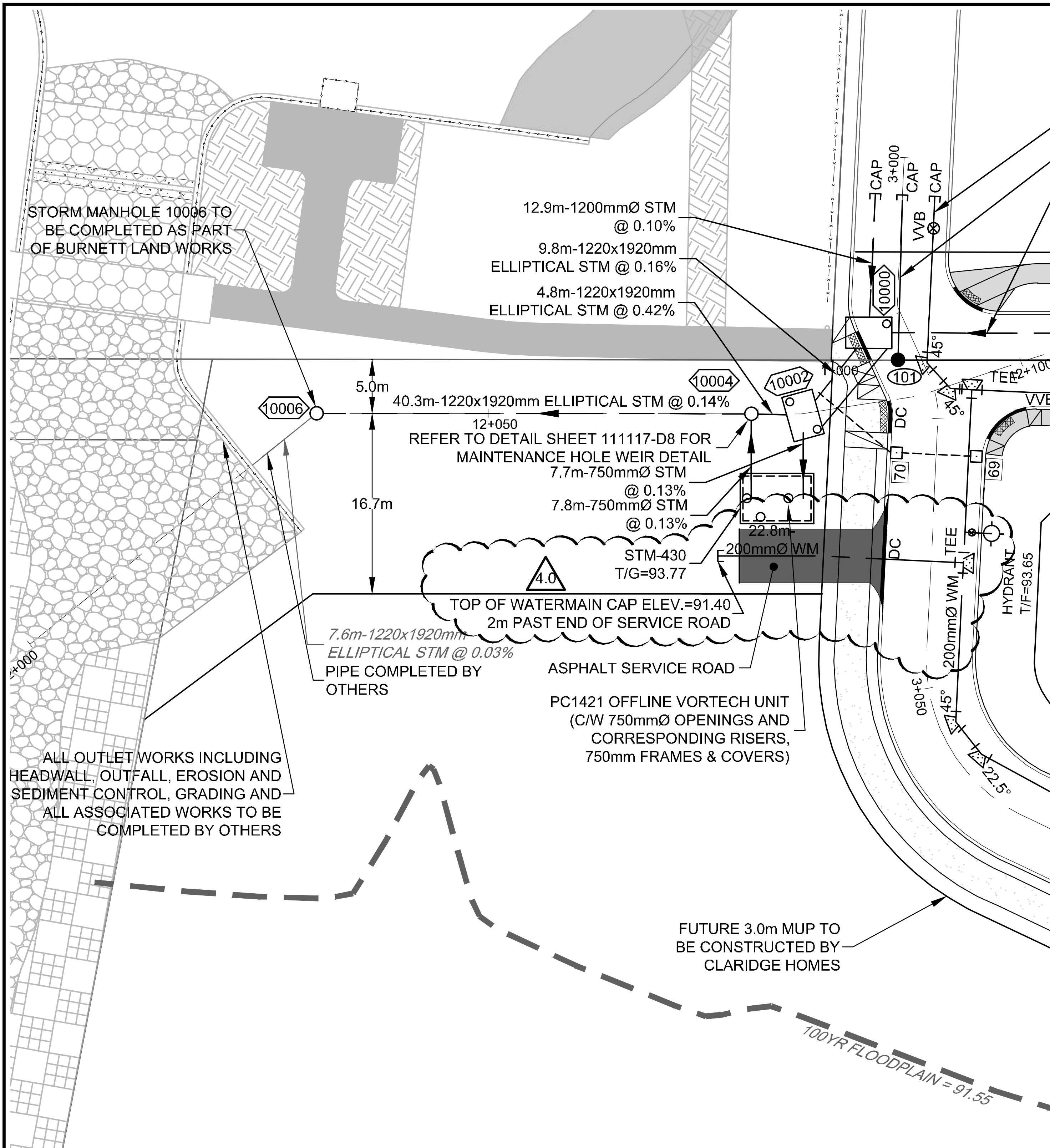
ATTACHMENTS:

- Figure CCN 4, Watermain Stub Under Service Road, dated March 2021

NOVATECH

per _________

Suite 200, 240 Michael Cowpland Drive, Ottawa ON K2M 1P6 Tel: 613.254.9643 www.novatech-eng.com



M:\2011\111117\CAD\Design\Figures\CCN4\FIG-CCN4.dwg, CCN4, Mar 18, 2021 - 10:59am, rgraylon

NOVATECH

Engineers, Planners & Landscape Architects
Suite 200, 240 Michael Cowpland Drive
Ottawa, Ontario, Canada K2M 1P6

Telephone (613) 254-9643
Facsimile (613) 254-5867
Website www.novatech-eng.com

BURNETT LANDS
3370 GREENBANK ROAD

WATERMAIN STUB UNDER SERVICE ROAD

SCALE 1 : 500 (0, 5m, 10m, 20m)		
DATE MAR 2021	JOB 111117	FIGURE CCN4

SHT8X11.DWG - 216mmx279mm

APPENDIX C

SANITARY

NOVATECH
Engineers, Planners & Landscape Architects

M E M O R A N D U M

See markups on:
- Figure 1
- "Sanitary Sewer Design Sheet, South Nepean Collector - Phase 2 & 3" (Dec 5, 2018 version)
- "Sanitary Sewer Design Sheet, South Nepean Collector - Phase 2 & 3" (August 20, 2015 version)

DATE: MAY 30, 2019

TO: JOSÉE VALLEE – CITY OF OTTAWA

FROM: CONRAD STANG – NOVATECH

RE: STRANDHERD DRIVE WIDENING PROJECT
SOUTH NEPEAN COLLECTOR PHASE 3: SANITARY FLOW CALCULATIONS

CC: EDSON DONNELLY – NOVATECH

1.0 PURPOSE

This memorandum provides the sanitary sewer flow calculations and design sheet for Phase 3 of the proposed South Nepean Collector (SNC), as part of the Strandherd Drive Widening Project. Sanitary design flows have been estimated for both current-day operational flows and future development peak design flows. They are based on the latest available planning information for the vacant lands within the SNC sewershed.

2.0 BACKGROUND

In January 1998, the Master Servicing Study for the South Nepean Urban Area provided a conceptual plan for water, wastewater and stormwater infrastructure. The preferred alternative for wastewater servicing was an east/west trunk sewer alignment that was to be completed in several phases. The proposed sanitary trunk sewer was initially called the Jock River Collector, but was renamed the South Nepean Collector during the original functional design study completed in 2003.

Phase 1 of the South Nepean Collector was completed in 2005 and currently terminates at a 2400mm maintenance hole located east of Longfields Drive, north of Bren-Maur Road. Phase 2 was completed in 2016 and currently terminates at a 2400mm maintenance hole located at the intersection of Strandherd Drive and Fraser Fields Way.

Phase 3 will extend the trunk sewer along Strandherd Drive to the intersection of Kennevale Drive. Here it will connect with the existing sanitary trunk sewer that was constructed as part of the 2014 works to improve Strandherd Drive and develop the CitiGate Lands.

The sanitary sewer flows were previously documented in the *South Nepean Collector – Functional Design Report and Update* (Dillon, 2012). Novatech (2016) completed a Hydraulics Review / Assessment of the sanitary flows presented in the Dillion Report (attached). This was based on the latest planning information for the vacant lands within the SNC sewershed. The results of the Hydraulics Review / Assessment (Novatech, 2016) were similar to the results from the Dillion (2012) analysis.

Suite 200, 240 Michael Cowpland Drive, Ottawa ON K2M 1P6 Tel: 613.254.9643 Fax: 613.254.5867 www.novatech-eng.com

3.0 DESIGN PARAMETERS AND POPULATION ESTIMATES

3.1 Design Parameters

The sanitary design flow were calculated using the parameters from the City of Ottawa Sewer Design Guidelines (October 2012), revised per Technical Bulletin ISTB-2018-01 (March 2018). These parameters are summarized in **Table 1** and **Table 2**.

Table 1: Peak Design Flow Parameters

Land Use	Average Daily Flow	Peaking Factor	Peak Extraneous Flows
Residential	280 L/cap/day	Harmon Equation, K=0.8 (1.6 min – 3.2 max)	0.33 L/s/ha
Commercial	28,000 L/ha/day	1.0 – 1.5*	
Institutional	28,000 L/ha/day	1.0 – 1.5*	
Other†	0 L/ha/day	N/A	

**Peak Factor = 1.5 if contributing area is >20%; Peak Factor = 1.0 if contributing area is <20%*
†Open Space, Arterial ROW, SWM Blocks, etc. with no sanitary flow contribution (extraneous flow only)

Table 2: Operational Design Flow Parameters

Land Use	Average Daily Flow	Peaking Factor	Peak Extraneous Flows
Residential	200 L/cap/day	Harmon Equation, K=0.6 (1.2 min – 2.4 max)	0.30 L/s/ha
Commercial	17,000 L/ha/day	1.0 (non-coincident peak)	
Institutional	17,000 L/ha/day	1.0 (non-coincident peak)	

**There are no industrial areas identified within the tributary area.*

Harmon Equation $= 1 + \frac{14}{4+\left(\frac{P}{1000}\right)^{\frac{1}{2}}} \times K$

Where:

P = Population
K = Correction Factor:
- Peak Flow = 0.8
- Operational = 0.6

3.2 Land Use Designations & Population Estimates

Population densities and unit counts for future residential development are based on the Novatech (2016) Hydraulics Review / Assessment; refer to **Table 3**. They are based on the concept plans provided by the developers of the future residential areas.

Table 3: Residential Land Use Population Densities

Residential Land Use	Units per ha	Persons per Unit	Persons per ha
Low Density (singles and semis)	26 – 28 (28 used)	2.7 – 3.4 (3.4 used)	95.2
Medium Density (row/townhouse)	50 – 60 (60 used)	2.7	162.0
High Density (apartments)	60 – 75 (75 used)	1.8	135.0

The land use designations shown in **Table 4** have been applied for the areas within Phases 2 & 3 of the SNC (Node 70 to 130). The Hydraulics Analysis / Review delineated the sewershed areas and land use designations using aerial photos (existing development) and conceptual site plans (future development).

Table 4: Land Use Designations

Land Use Designation	
Secondary Plan	**SNC Design**
Residential	Residential (Low / Medium / High Density)
Institutional / Office	Institutional
Commercial	Commercial
Recreational	
Business Park	
Prestige Business Park	
Park/Open Space Area	Other*
Ex. Snow Disposal Facility (future commercial)	
Stormwater Management Facility	
Conservation Lands	
Arterial Right-of-Ways	

** No sanitary flow contribution - extraneous flows (inflow/infiltration) only.*

The overall residential population estimate and sewershed area for Phases 2 and 3 of the SNC is provided in **Table 5** below. It is assumed that the snow dump facility at the Stranderd Drive and McKenna Casey Drive will ultimately be re-zoned for commercial development.

Table 5: Population Estimates and Areas

Existing / Future	Estimated Population / Area	Novatech (2015)
Existing	Estimated Population	6,944 persons
	Gross Residential Area	60.09 ha
	Gross Commercial / Institutional Area	64.37 ha
	Total Sewershed Area	124.5 ha
Future (full service)	Estimated Population	27,312 persons
	Gross Residential Area	248.48 ha
	Gross Commercial / Institutional Area	228.82 ha
	Total Sewershed Area	477.3 ha

4.0 SANITARY DESIGN FLOWS

The sanitary flow allocations for Phases 2 and 3 of the SNC are provided in **Table 6**. The corresponding sanitary drainage area plan is provided as **Figure 1**. Sanitary sewer flow calculations for Phases 2 and 3 and detailed sanitary sewer design sheets for Phase 3 are attached to this memorandum.

The estimated sanitary design flows from Phase 3 of the SNC (entering Node 90) are as follows:

- Present-Day Operational Design Flows (Theoretical) = 55.1 L/s
- Future Peak Design Flows = 282.5 L/s

The outlet for Phase 3 of the SNC is the existing 900mm outlet pipe at the 2400mm maintenance hole (Node 90) located at the intersection of Strandherd Drive and Fraser Fields Way. Given a minimum design slope of 0.10%, this 900mm sanitary trunk sewer would have a full flow capacity of 597.2 L/s. Therefore, the downstream sanitary trunk sewer would be at 64% capacity, based on the future peak design flow being 282.5 L/s.

ATTACHMENTS:

- Figure 1: Sanitary Drainage Areas and Land Use
- Sanitary Sewer Flow Calculations
- Sanitary Sewer Design Sheets (Phase 3)
- South Nepean Collector Phase 2: Hydraulics Review / Assessment (Novatech, 2016)
- Excerpts from Dillion (2012)

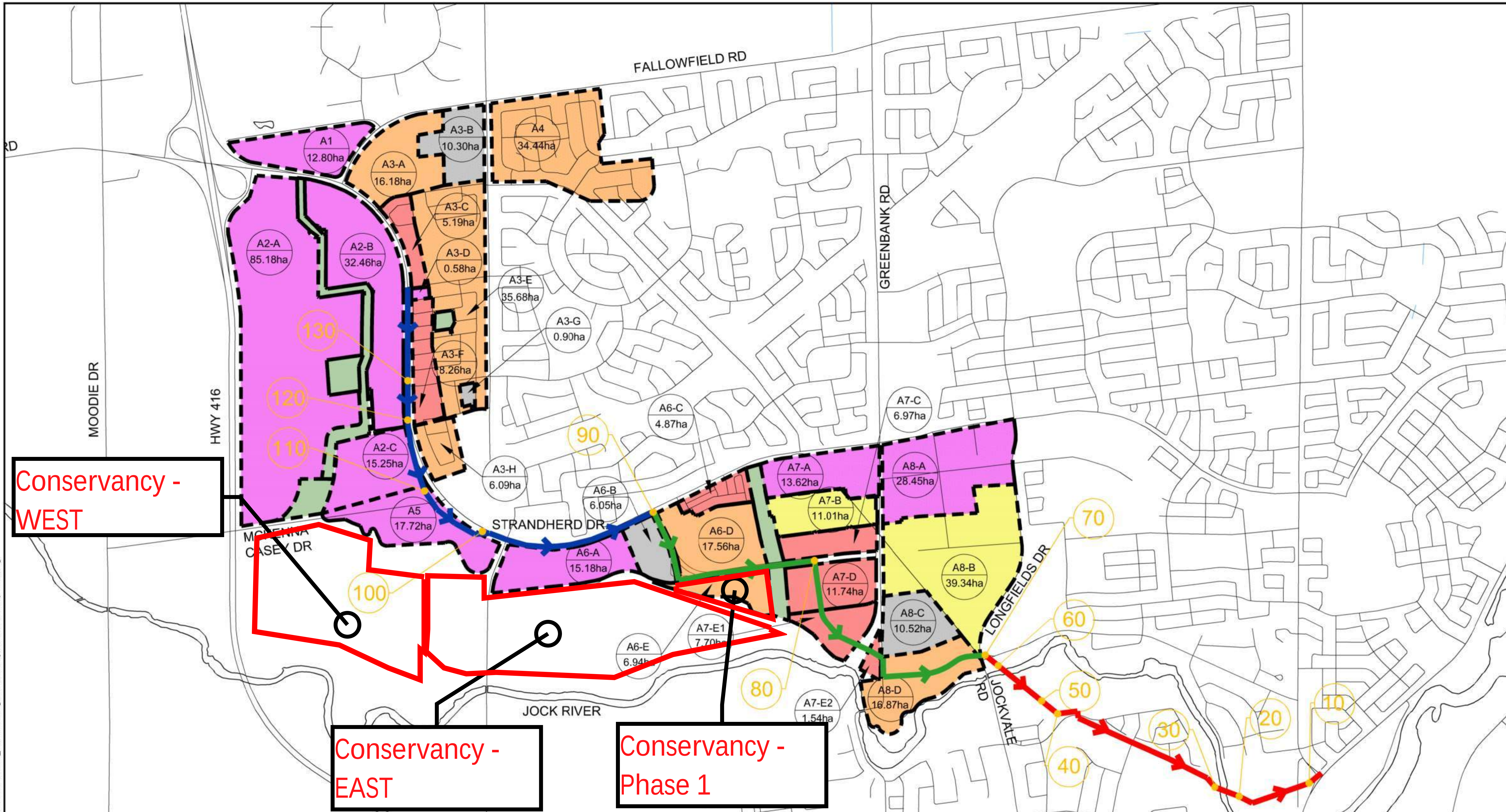
LICENSED PROFESSIONAL ENGINEER
C. M. STANG
100125708
May 30/19
PROVINCE OF ONTARIO

Suite 200, 240 Michael Cowpland Drive, Ottawa ON K2M 1P6 Tel: 613.254.9643 Fax: 613.254.5867 www.novatech-eng.com

Table 6: Updated Allocation of Commercial, Institutional and Residential Demands to Phases 2 & 3 (Nodes 70 – 130) of the SNC by Collection Area

Collection Area	Upstream Node	Existing / Proposed Development	Existing / Proposed Land Use	Area (ha)	Estimated Number of Residential Units	Population Density (persons / ha)	Comment	Reference
A1	130	Proposed	Commercial	12.80	-	-	O'Keefe Court – Conceptual site plan shows proposed commercial.	Conceptual Plans for O'Keefe Court
A2-A	130	Proposed	Commercial	85.18	-	-	CitiGate – Analysis uses same approach as the design for CitiGate.	Detailed Servicing and SWM Report (Phase 1) (Novatech, 2014)
A2-B	130	Proposed	Commercial	32.46	-	-		
A2-C	120	Proposed	Commercial (ex. Snow dump)	15.25	-	-	Existing snow dump facility assumed to be future commercial.	Functional Design Report and Update – SNC Phase 2 and 3 (Dillon, 2012)
A3-A	130	Proposed	Low Density Residential	16.18	461	95.2	Havencrest – Existing single family units.	Havencrest Design Report (IBI, 2013)
A3-B	130	Existing	Institutional	10.30	-	-	Cedarview Middle School and Cedarview Alliance Church.	Aerial Photos / Site Visits
A3-C	130	Existing	Medium Density Residential	5.19	311	162	Existing townhouse units.	
A3-D	130	Existing	Commercial	0.58	-	-	Existing commercial buildings.	
A3-E	130	Existing	Low Density Residential	35.68	999	95.2	Existing single family units.	
A3-F	130	Existing	Medium Density Residential	8.26	496	162.0	Existing townhouse units.	
A3-G	130	Existing	Institutional	0.90	-	-	Ottawa Torah Centre Chibad.	
A3-H	120	Existing	Low Density Residential	6.09	171	95.2	Existing single family units.	
A4	130	Existing	Low Density Residential	34.44	964	95.2	Existing single family units currently serviced by Jockvale pump station; to be redirected to SNC.	Functional Design Report and Update – SNC Phase 2 and 3 (Dillon, 2012); based on 2011 Census.
A5	110	Proposed	Commercial	17.72	-	-	Proposed commercial south of McKenna Casey Drive.	Site Visits
A6-A	100	Proposed	Commercial	15.18	-	-	Proposed commercial south of Srandherd Drive; east of Borrisokane Road.	Conceptual Plan for Lands Adjacent the Kennedy-Burnett SWMF provided by Minto (2015)
A6-B	100	Proposed	Institutional	6.05			Proposed school site on Minto property.	
A6-C	90	Existing	Medium Density Residential	4.87	292	162.0	Existing townhouse units.	Aerial Photos / Site Visits
A6-D	90	Proposed	Low Density Residential	17.56	492	95.2	Proposed single family units on lands owned by Minto / Mion.	Conceptual Plans for Lands Adjacent the Kennedy-Burnett SWMF provided by land owners.
A6-E	90	Proposed	Low Density Residential	6.94	203	95.2	Proposed single family units on lands owned by Pavic / Braovac.	
A7-A	80	Existing	Commercial	13.62	-	-	Existing large retail stores (commercial).	Aerial Photos
A7-B	80	Proposed	High Density Residential	11.01	826	135.0	Proposed high density units on lands owned by Richcraft / Trinity.	Conceptual Plans for Lands Adjacent the Kennedy-Burnett SWMF provided by land owners.
A7-C	80	Proposed	Medium Density Residential	6.97	418	162.0	Proposed Medium density units on lands owned by Mion.	
A7-D	80	Proposed	Medium Density Residential	11.74	704	162.0	Proposed Medium density units on lands owned by Caivan.	
A7-E1/E2	80	Proposed	Medium Density Residential	9.24	554	162.0	Proposed Medium density units on lands owned by Claridge.	
A8-A	80	Existing	Commercial	28.45	-	-	Existing Barrhaven Market Place (commercial).	Aerial Photos / Site Visits
A8-B	80	Proposed	High Density Residential	39.34	2951	135.0	Future development similar to Ampersands development.	Site Visits
A8-C	80	Existing	Institutional	10.52	-	-	Existing St. Joseph High School.	Aerial Photos / Site Visits
A8-D	80	Proposed	Low Density Residential	16.87	1012	162.0	Proposed 600 low density residential units.	Functional Design Report and Update – SNC Phase 2 and 3 (Dillon, 2012)

Suite 200, 240 Michael Cowpland Drive, Ottawa ON K2M 1P6 Tel: 613.254.9643 Fax: 613.254.5867 www.novatech-eng.com



LEGEND

- EXISTING / PROPOSED HIGH DENSITY RESIDENTIAL
- EXISTING / PROPOSED MEDIUM DENSITY RESIDENTIAL
- EXISTING / PROPOSED LOW DENSITY RESIDENTIAL
- EXISTING / PROPOSED COMMERCIAL
- EXISTING / PROPOSED INSTITUTIONAL
- OTHER LANDS (OPEN SPACE, PARKS, AND SWMFS)
- SOUTH NEPEAN COLLECTOR PHASE 1
- SOUTH NEPEAN COLLECTOR PHASE 2
- SOUTH NEPEAN COLLECTOR PHASE 3
- 80 SOUTH NEPEAN COLLECTOR NODE ID

N

NOVATECH
Engineers, Planners & Landscape Architects
Suite 200, 240 Michael Cowpland Drive
Ottawa, Ontario, Canada K2M 1P6
Telephone (613) 254-9643
Facsimile (613) 254-5867
Website www.novatech-eng.com

SOUTH NEPEAN COLLECTOR SEWER

SANITARY DRAINAGE AREAS AND LAND USE

SCALE	1:20 000		
DATE MAY 2019	JOB 117190	FIGURE FIG. 1	

SANITARY SEWER DESIGN SHEET

South Nepean Collector - Phase 2 & 3

Theoretical Current Operational Peak Wastewater Flow

PROJECT #:	117190
DESIGNED BY:	CMS
CHECKED BY:	RJD
DATE:	December 5, 2018

NOVATECH
Engineers, Planners & Landscape Architects

Location			Areas				Population				Individual Design Flows			Cumulative Design Flows				
Area I.D.	Existing Land Use	Upstream Node	Gross Commercial Area (ha)	Gross Institutional Area (ha)	Gross Residential Area (ha)	Total Gross Area (ha)	Residential Popultation Density (people / ha)	Individual Residential Population	Cumulative Residential Population	Residential Peaking Factor (Harmon Eqn[1])	Commercial Peak Flow Rate[2] (17,000 L/ha/d) (L/s)	Institutional Peak Flow Rate[2] (17,000 L/ha/d) (L/s)	Infiltration / Inflow Rate (0.3 L/s/ha) (L/s)	Commercial (L/s)	Institutional (L/s)	Infiltration / Inflow (L/s)	Residential Peak Flow Rate (200 L/cap/d) (L/s)	Cumulative Peak Design Flow (L/s)
A1	Open Space	130				0.00					0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
A2-A	Open Space	130				0.00					0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
A2-B	Open Space	130				0.00					0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
A3-A	Open Space	130				0.00					0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
A3-B	Institutional	130		10.30		10.30					0.0	2.0	3.1	0.0	2.0	3.1	0.0	5.1
A3-C	Medium Density Residential	130			5.19	5.19	162.0	841	841	2.40	0.0	0.0	1.6	0.0	2.0	4.6	4.7	11.3
A3-D	Commercial	130	0.58			0.58			841	2.40	0.1	0.0	0.2	0.1	2.0	4.8	4.7	11.6
A3-E	Low Density Residential	130			35.68	35.68	95.2	3397	4238	2.39	0.0	0.0	10.7	0.1	2.0	15.5	23.4	41.1
A3-F	Medium Density Residential	130			8.26	8.26	162	1338	5576	2.32	0.0	0.0	2.5	0.1	2.0	18.0	29.9	50.1
A3-G	Institutional	130		0.90		0.90			5576	2.32	0.0	0.2	0.3	0.1	2.2	18.3	29.9	50.5
A4	Low Density Residential*	130				0.00			5576	2.32	0.0	0.0	0.0	0.1	2.2	18.3	29.9	50.5
A2-C	Snow Dump Facility	120				0.00			5576	2.32	0.0	0.0	0.0	0.1	2.2	18.3	29.9	50.5
A3-H	Low Density Residential	120			6.09	6.09	95.2	580	6155	2.30	0.0	0.0	1.8	0.1	2.2	20.1	32.7	55.1
A5	Open Space	110				0.00			6155	2.30	0.0	0.0	0.0	0.1	2.2	20.1	32.7	55.1
A6-A	Open Space	100				0.00			6155	2.30	0.0	0.0	0.0	0.1	2.2	20.1	32.7	55.1
A6-B	Open Space	100				0.00			6155	2.30	0.0	0.0	0.0	0.1	2.2	20.1	32.7	55.1
A6-C	Medium Density Residential	90			4.87	4.87	162.0	789	6944	2.27	0.0	0.0	1.5	0.1	2.2	21.6	36.4	60.3
A6-D	Open Space	90				0.00			6944	2.27	0.0	0.0	0.0	0.1	2.2	21.6	36.4	60.3
A6-E	Open Space	90				0.00			6944	2.27	0.0	0.0	0.0	0.1	2.2	21.6	36.4	60.3
A7-A	Commercial	90	13.62			13.62			6944	2.27	2.7	0.0	4.1	2.8	2.2	25.6	36.4	67.1
A7-B	Open Space	90				0.00			6944	2.27	0.0	0.0	0.0	2.8	2.2	25.6	36.4	67.1
A7-C	Open Space	90				0.00			6944	2.27	0.0	0.0	0.0	2.8	2.2	25.6	36.4	67.1
A7-D	Open Space	90				0.00			6944	2.27	0.0	0.0	0.0	2.8	2.2	25.6	36.4	67.1
A7-E1/E2	Open Space	90				0.00			6944	2.27	0.0	0.0	0.0	2.8	2.2	25.6	36.4	67.1
A8-A	Commercial	80	28.45			28.45			6944	2.27	5.6	0.0	8.5	8.4	2.2	34.2	36.4	81.2
A8-B	Open Space	80				0.00			6944	2.27	0.0	0.0	0.0	8.4	2.2	34.2	36.4	81.2
A8-C	Institutional	80		10.52		10.52			6944	2.27	0.0	2.1	3.2	8.4	4.3	37.3	36.4	86.4
A8-D	Open Space	80				0.00			6944	2.27	0.0	0.0	0.0	8.4	4.3	37.3	36.4	86.4
ROW Along SNC Sewer Alignment	-	80				14.34			6944	2.27	0.0	0.0	4.3	8.4	4.3	41.6	36.4	90.7
TOTAL		***80***	***42.65***	***21.72***	***60.09***	***138.80***	***-***	***6944***	***6944***	***2.27***	***8.4***	***4.3***	***41.6***	***8.4***	***4.3***	***41.6***	***36.4***	***90.7***

Residential Land Use	Population Density (Units / ha)	Persons per Unit	Persons per ha
Low Density (singles and semis)	26 – 28 (28 used)	2.7 – 3.4 (3.4 used)	95.2
Medium Density (row/townhouse)	50 – 60 (60 used)	2.7	162.0
High Density (apartments)	60 – 75 (75 used)	1.8	135.0

Notes:

1. Harmon Equation = $1 + [14 / (4+(P/1000)^{1/2})] \times K$

Where: P = population; K = correction factor = 0.6

2. Instituional / Commercial Peaking Factor = 1.0

Reported Design Flows / Assumptions:

1. Area A4: Existing single family units currently serviced by Jockvale pump station; currently not directed to SNC

PROJECT #: 117190
DESIGNED BY: CMS
CHECKED BY: RJD
DATE: December 5, 2018

SANITARY SEWER DESIGN SHEET

South Nepean Collector - Phase 2 & 3

Theoretical Future Full Service Peak Wastewater Flow

NOVATECH
Engineers, Planners & Landscape Architects

Location			Areas				Population				Individual Design Flows			Cumulative Design Flows				
Area I.D.	Existing / Proposed Land Use	Upstream Node	Gross Commercial Area (ha)	Gross Institutional Area (ha)	Gross Residential Area (ha)	Total Gross Area (ha)	Residential Popultation Density (people / ha)	Individual Residential Population	Cumulative Residential Population	Residential Peaking Factor (Harmon Eqn[1])	Commercial Peak Flow Rate[2] (28,000 L/ha/d) (L/s)	Institutional Peak Flow Rate[2] (28,000 L/ha/d) (L/s)	Infiltration / Inflow Rate (0.33 L/s/ha) (L/s)	Commercial (L/s)	Institutional (L/s)	Infiltration / Inflow (L/s)	Residential Peak Flow Rate (280 L/cap/d) (L/s)	Cumulative Peak Design Flow (L/s)
A1	Commercial	130	12.80			12.80					6.2	0.0	4.2	6.2	0.0	4.2	0.0	10.4
A2-A	Commercial	130	85.18			85.18					41.4	0.0	28.1	47.6	0.0	32.3	0.0	80.0
A2-B	Commercial	130	32.46			32.46					15.8	0.0	10.7	63.4	0.0	43.0	0.0	106.5
A3-A	Low Density Residential	130			16.18	16.18	95.2	1540	1540	3.14	0.0	0.0	5.3	63.4	0.0	48.4	15.7	127.5
A3-B	Institutional	130		10.30		10.30			1540	3.14	0.0	3.3	3.4	63.4	3.3	51.8	15.7	134.2
A3-C	Medium Density Residential	130			5.19	5.19	162.0	841	2381	3.02	0.0	0.0	1.7	63.4	3.3	53.5	23.3	143.6
A3-D	Commercial	130	0.58			0.58			2381	3.02	0.3	0.0	0.2	63.7	3.3	53.7	23.3	144.0
A3-E	Low Density Residential	130			35.68	35.68	95.2	3397	5778	2.75	0.0	0.0	11.8	63.7	3.3	65.5	51.5	184.0
A3-F	Medium Density Residential	130			8.26	8.26	162	1338	7116	2.68	0.0	0.0	2.7	63.7	3.3	68.2	61.8	197.0
A3-G	Institutional	130		0.90		0.90			7116	2.68	0.0	0.3	0.3	63.7	3.6	68.5	61.8	197.6
A4	Low Density Residential	130			34.44	34.44	95.2	3279	10395	2.55	0.0	0.0	11.4	63.7	3.6	79.9	85.9	233.1
A2-C	Commercial (ex. snow dump)	120	15.25			15.25			10395	2.55	7.4	0.0	5.0	71.1	3.6	84.9	85.9	245.5
A3-H	Low Density Residential	120			6.09	6.09	95.2	580	10974	2.53	0.0	0.0	2.0	71.1	3.6	86.9	90.0	251.7
A5	Commercial	110	17.72			17.72			10974	2.53	8.6	0.0	5.8	79.7	3.6	92.7	90.0	266.1
A6-A	Commercial	100	15.18			15.18			10974	2.53	7.4	0.0	5.0	87.1	3.6	97.7	90.0	278.5
A6-B	Institutional	100		6.05		6.05			10974	2.53	0.0	2.0	2.0	87.1	5.6	99.7	90.0	282.5
A6-C	Medium Density Residential	90			4.87	4.87	162.0	789	11763	2.51	0.0	0.0	1.6	87.1	5.6	101.4	95.6	289.6
A6-D	Low Density Residential	90			17.56	17.56	95.2	1672	13435	2.46	0.0	0.0	5.8	87.1	5.6	107.1	107.2	307.0
A6-E	Low Density Residential	90			6.94	6.94	95.2	661	14096	2.44	0.0	0.0	2.3	87.1	5.6	109.4	111.7	313.8
A7-A	Commercial	90	13.62			13.62			14096	2.44	6.6	0.0	4.5	93.7	5.6	113.9	111.7	324.9
A7-B	High Density Residential	90			11.01	11.01	135.0	1486	15582	2.41	0.0	0.0	3.6	93.7	5.6	117.6	121.7	338.5
A7-C	Medium Density Residential	90			6.97	6.97	162.0	1129	16711	2.38	0.0	0.0	2.3	93.7	5.6	119.9	129.2	348.3
A7-D	Medium Density Residential	90			11.74	11.74	162.0	1902	18613	2.35	0.0	0.0	3.9	93.7	5.6	123.7	141.6	364.6
A7-E1/E2	Medium Density Residential	90			9.24	9.24	162.0	1497	20110	2.32	0.0	0.0	3.0	93.7	5.6	126.8	151.2	377.3
A8-A	Commercial	80	28.45			28.45			20110	2.32	13.8	0.0	9.4	107.5	5.6	136.2	151.2	400.5
A8-B	High Density Residential	80			39.34	39.34	135.0	5311	25421	2.24	0.0	0.0	13.0	107.5	5.6	149.2	184.4	446.7
A8-C	Institutional	80		10.52		10.52			25421	2.24	0.0	3.4	3.5	107.5	9.0	152.6	184.4	453.6
A8-D	Low Density Residential	80			16.87	16.87	120.9	2040	27461	2.21	0.0	0.0	5.6	107.5	9.0	158.2	196.9	471.6
ROW Along SNC Sewer Alignment	-	80				14.34			27461	2.21	0.0	0.0	4.7	107.5	9.0	162.9	196.9	476.3
TOTAL		***80***	***221.24***	***27.77***	***230.38***	***493.73***	***-***	***27461***	***27461***	***2.21***	***107.5***	***9.0***	***162.9***	***107.5***	***9.0***	***162.9***	***196.9***	***476.3***

Residential Land Use	Population Density (Units / ha)	Persons per Unit	Persons per ha
Low Density (singles and semis)	26 – 28 (28 used)	2.7 – 3.4 (3.4 used)	95.2
Medium Density (row/townhouse)	50 – 60 (60 used)	2.7	162.0
High Density (apartments)	60 – 75 (75 used)	1.8	135.0

Notes:

1. Harmon Equation = $1 + [14 / (4+(P/1000)^{1/2})] \times K$

Where: P = population; K = correction factor = 0.8

2. Commercial Peaking Factor = 1.5; Institutional Peaking Factor = 1.0

Reported Design Flows / Assumptions:

1. Area A4: Existing single family units currently serviced by Jockvale pump station to be redirected to SNC

2. Area A8-D: proposed 600 medium density residential units

See Note (2) in the DSEL "Barrhaven Conservancy - Evaluation of SNC Flows" design sheet

THE PRIOR NOVATECH SNC DESIGN SHEET HAD FLOWS AT 423.6 L/s AFTER AREA ID "A6-E'.

THIS UPDATED NOVATECH 'PHASE 3' EVALUATION HAS A FLOW OF 313.8 L/s.

THE DSEL EVALUATION OF SANITARY FLOWS WITH THE NEW CITY DESIGN PARAMETERS AT THIS SAME NODE (WITH CONSERVANCY WEST AND EAST INCLUDED) IS ~401.05 L/s (WHICH IS LESS THAN THE PRIOR 423.6 L/s NOTED ABOVE)

SOUTH NEPEAN COLLECTOR (PHASE 3)
SANITARY SEWER DESIGN SHEET

DECEMBER 5 2018
JOB# 117190

NOVATECH
Engineers, Planners & Landscape Architects

LOCATION			Area				Population		Cumulative Design Flows					PROPOSED SEWER						
From MH	To MH	Upstream Node	Gross Commercial Area (ha)	Gross Institutional Area (ha)	Gross Residential Area (ha)	Total Gross Area (ha)	Cumulative Residential Population	Residential Peaking Factor (Harmon Eqn[1])	Commercial (L/s)	Institutional (L/s)	Infiltration / Inflow (L/s)	Residential Peak Flow Rate (280 L/cap/d) (L/s)	Cumulative Peak Design Flow (L/s)	Length (m)	Pipe Size (mm)	Type	Slope %	Capacity (L/s)	Full Flow Velocity (m/s)	Ratio (Q/Qfull)
SA 22	SA 21	120	146.27	11.20	105.84	263.31	10974	2.53	71.1	3.6	86.9	90.0	251.7	131.9	750	CONC	0.10	367.3	0.81	69%
SA 21	SA 20	120											251.7	90.6	750	CONC	0.10	367.3	0.81	69%
SA 20	SA 19	120											251.7	90.0	750	CONC	0.10	367.3	0.81	69%
SA 19	SA 18	120											251.7	72.1	750	CONC	0.10	367.3	0.81	69%
SA 18	SA 17	120											251.7	71.9	750	CONC	0.10	367.3	0.81	69%
SA 17	SA 16	120											251.7	71.4	750	CONC	0.10	367.3	0.81	69%
SA 16	SA 15	110	163.99	11.20	105.84	281.03	10974	2.53	79.7	3.6	92.7	90.0	266.1	73.2	750	CONC	0.10	367.3	0.81	72%
SA 15	SA 14	110											266.1	67.5	750	CONC	0.10	367.3	0.81	72%
SA 14	SA 13	110											266.1	56.6	750	CONC	0.10	367.3	0.81	72%
SA 13	SA 12	110											266.1	133.5	750	CONC	0.10	367.3	0.81	72%
SA 12	SA 11	110											266.1	150.0	750	CONC	0.10	367.3	0.81	72%
SA 11	SA 10	100	179.17	17.25	105.84	302.26	10974	2.53	87.1	5.6	99.7	90.0	282.5	97.8	750	CONC	0.10	367.3	0.81	77%
SA 10	SA 9	100											282.5	76.7	750	CONC	0.10	367.3	0.81	77%
SA 9	SA 8	100											282.5	79.7	750	CONC	0.10	367.3	0.81	77%
SA 8	SA 7	100											282.5	75.3	750	CONC	0.10	367.3	0.81	77%
SA 7	SA 6	100											282.5	84.9	750	CONC	0.10	367.3	0.81	77%
SA 6	SA 5	100											282.5	77.1	750	CONC	0.10	367.3	0.81	77%
SA 5	SA 4	100											282.5	78.9	750	CONC	0.10	367.3	0.81	77%
SA 4	SA 3	100											282.5	80.5	750	CONC	0.10	367.3	0.81	77%
SA 3	SA 2	100											282.5	150.0	750	CONC	0.10	367.3	0.81	77%
SA 2	SA 1	100											282.5	114.6	750	CONC	0.10	367.3	0.81	77%
SA 1	*EX 80*	100											282.5	12.4	750	CONC	0.10	367.3	0.81	77%

Design Parameters:

Residential Land Use	Population Density (Units / ha)	Persons per Unit	Persons per ha
Low Density (singles / semis)	26 – 28 (28 used)	2.7 – 3.4 (3.4 used)	95.2
Medium Density (row / townhouse)	50 – 60 (60 used)	2.7	162.0
High Density (apartments)	60 – 75 (75 used)	1.8	135.0

Notes:

1. Harmon Equation = 1 + [14 / (4+(P/1000)$^{1/2}$)] x K

Where: P = population; K = correction factor = 0.8

2. Commercial Peaking Factor = 1.5; Institutional Peaking Factor = 1.0

Reported Design Flows / Assumptions:

1. Area A4: Existing single family units currently serviced by Jockvale pump station to be redirected to SNC

2. Area A8-D: proposed 600 medium density residential units

LICENSED PROFESSIONAL ENGINEER
C. M. STANG
100125708
March 13/19
PROVINCE OF ONTARIO

M E M O R A N D U M

DATE: MAY 26, 2016

TO: JONATHAN KNOYLE – CITY OF OTTAWA

FROM: CONRAD STANG – NOVATECH

RE: SOUTH NEPEAN COLLECTOR PHASE 2: SANITARY FLOW CALCULATIONS

CC: EDSON DONNELLY – NOVATECH

1.0 PURPOSE

This memorandum provides the sanitary sewer flow calculations and design sheet for Phase 2 of the proposed South Nepean Collector (SNC). Sanitary design flows have been estimated for both current-day operational flows and future development peak design flows, based on the latest available planning information for the vacant lands within the SNC sewershed.

2.0 BACKGROUND

In January 1998, the Master Servicing Study for the South Nepean Urban Area provided a conceptual plan for water, wastewater and stormwater infrastructure. The preferred alternative for wastewater servicing was an east/west trunk sewer alignment that was to be completed in several phases. The proposed sanitary trunk sewer was initially called the Jock River Collector, but was renamed the South Nepean Collector during the original functional design study completed in 2003.

Phase 1 of the South Nepean Collector was completed in 2005 and currently terminates at a 2400mm maintenance hole located east of Longfields Drive, north of Bren-Maur Road. Phase 2 will extend the trunk sewer to Strandherd Drive at the intersection of the proposed transitway along the proposed extension to Chapman Mills Drive. Phase 3 will extend the trunk sewer along Strandherd Drive to the intersection of Maravista Drive.

The sanitary sewer flows were previously documented in the *South Nepean Collector – Functional Design Report and Update* (Dillon, 2012). A review of the sanitary flows provided in the Dillion Report based on the latest planning information for the vacant lands within the SNC sewershed was documented in the technical memorandum titled South Nepean Collector Phase 2: Hydraulics Review / Assessment (Novatech, 2015), which is attached to this memorandum. The results of the Hydraulics Review / Assessment (Novatech, 2015) were very similar to the results from the Dillion (2012) analysis.

Suite 200, 240 Michael Cowpland Drive, Ottawa ON K2M 1P6 Tel: 613.254.9643 Fax: 613.254.5867 www.novatech-eng.com

3.0 DESIGN PARAMETERS AND POPULATION ESTIMATES

3.1 Design Parameters

The sanitary design flow were calculated using the parameters from the City of Ottawa Sewer Design Guidelines (October 2012), and are summarized in **Table 1** and **Table 2**.

Table 1: Peak Design Flow Parameters

Land Use	Average Daily Flow	Peaking Factor	Peak Extraneous Flows
Residential	350 L/cap/day	Harmon Equation, K=1 (2.0 min – 4.0 max)	0.28 L/s/ha
Commercial	50,000 L/ha/day	1.5	
Institutional	50,000 L/ha/day	1.5	
Other*	0 L/ha/day	N/A	

**Open Space, Arterial ROW, SWM Blocks, etc. with no sanitary flow contribution (extraneous flow only)*

Table 2: Operational Design Flow Parameters

Land Use	Average Daily Flow	Peaking Factor	Peak Extraneous Flows
Residential	300 L/cap/day	Harmon Equation, K=0.6 (1.2 min – 2.4 max)	Dry weather 0.05-0.08 L/s/ha Wet Weather 0.15 - 0.20 L/s/ha (typical events) 0.28 L/s/ha (large/annual events) 0.30 - 0.50 L/s/ha (extreme events)
Commercial	17,000 L/ha/day	1.0 (non-coincident peak)	
Institutional	10,000 L/ha/day	1.0 (non-coincident peak)	

**There are no industrial areas identified within the tributary area.*

Harmon Equation $= 1 + \frac{14}{4+\left(\frac{P}{1000}\right)^{\frac{1}{2}}} \times K$

Where:

P = Population

K = Correction Factor:

- Peak Flow = 1
- Operational = between 0.4 to 0.6 (0.6 used)

3.2 Land Use Designations & Population Estimates

Population densities and unit counts for future residential development are based on the current concept plans for these areas, and are presented in **Table 3**.

Suite 200, 240 Michael Cowpland Drive, Ottawa ON K2M 1P6 Tel: 613.254.9643 Fax: 613.254.5867 www.novatech-eng.com

Table 3: Residential Land Use Population Densities

Residential Land Use	Units per ha	Persons per Unit	Persons per ha
Low Density (singles and semis)	26 – 28 (28 used)	2.7 – 3.4 (3.4 used)	95.2
Medium Density (row/townhouse)	50 – 60 (60 used)	2.7	162.0
High Density (apartments)	60 – 75 (75 used)	1.8	135.0

The land use designations shown in **Table 4** have been applied for the areas within Phases 2 and 3 of the SNC (Node 70 to 130). The sewershed areas and land use designations were delineated using aerial photos (existing development) and conceptual site plans (future development).

Table 4: Land Use Designations

Land Use Designation	
Secondary Plan	**SNC Design**
Residential	Residential (Low / Medium / High Density)
Institutional / Office	Institutional
Commercial	Commercial
Recreational	
Business Park	
Prestige Business Park	
Park/Open Space Area	Other*
Ex. Snow Disposal Facility (future commercial)	
Stormwater Management Facility	
Conservation Lands	
Arterial Right-of-Ways	

** No sanitary flow contribution - extraneous flows (inflow/infiltration) only.*

The overall residential population estimate and sewershed area for Phases 2 and 3 of the SNC is provided in **Table 5** below. It is assumed that the snow dump facility at the Stranderd Drive and McKenna Casey Drive will ultimately be re-zoned for commercial development.

Table 5: Population Estimates and Areas

Existing / Future	Estimated Population / Area	Novatech (2015)
Existing	Estimated Population	6,944 persons
	Gross Residential Area	60.09 ha
	Gross Commercial / Institutional Area	64.37 ha
	Total Sewershed Area	124.5 ha
Future (full service)	Estimated Population	27,312 persons
	Gross Residential Area	248.48 ha
	Gross Commercial / Institutional Area	228.82 ha
	Total Sewershed Area	477.3 ha

Suite 200, 240 Michael Cowpland Drive, Ottawa ON K2M 1P6 Tel: 613.254.9643 Fax: 613.254.5867 www.novatech-eng.com

4.0 SANITARY DESIGN FLOWS

The sanitary flow allocations for Phases 2 and 3 of the SNC are provided in **Table 6**. The corresponding sanitary drainage area plan is provided as **Figure 1**. Sanitary sewer flow calculations for Phases 2 and 3 and detailed sanitary sewer design sheets for Phase 2 are attached to this memorandum.

The estimated sanitary design flows from Phases 2 and 3 of the SNC (entering Node 70) are as follows:

- Present-Day Operational Design Flows (Theoretical) = 72.5 L/s
- Future Peak Design Flows = 634.2 L/s

The outlet for Phase 2 of the SNC is the existing 1050mm outlet pipe at the 2400mm maintenance hole (Node 70) located east of Longfields Drive, north of Bren-Maur Road. Given a minimum design slope of 0.10%, this sanitary trunk sewer would have a full flow capacity of 900.5 L/s. Therefore, the downstream sanitary trunk sewer would be at 70% capacity, based on the future peak design flow being 634.2 L/s.

ATTACHMENTS:

- Figure 1: Sanitary Drainage Areas and Land Use
- Sanitary Sewer Flow Calculations
- Sanitary Sewer Design Sheets (Phase 2)
- South Nepean Collector Phase 2: Hydraulics Review / Assessment (Novatech, 2015)

LICENSED PROFESSIONAL ENGINEER
May 26/16
C. M. STANG
100125708
Conrad Stang
PROVINCE OF ONTARIO

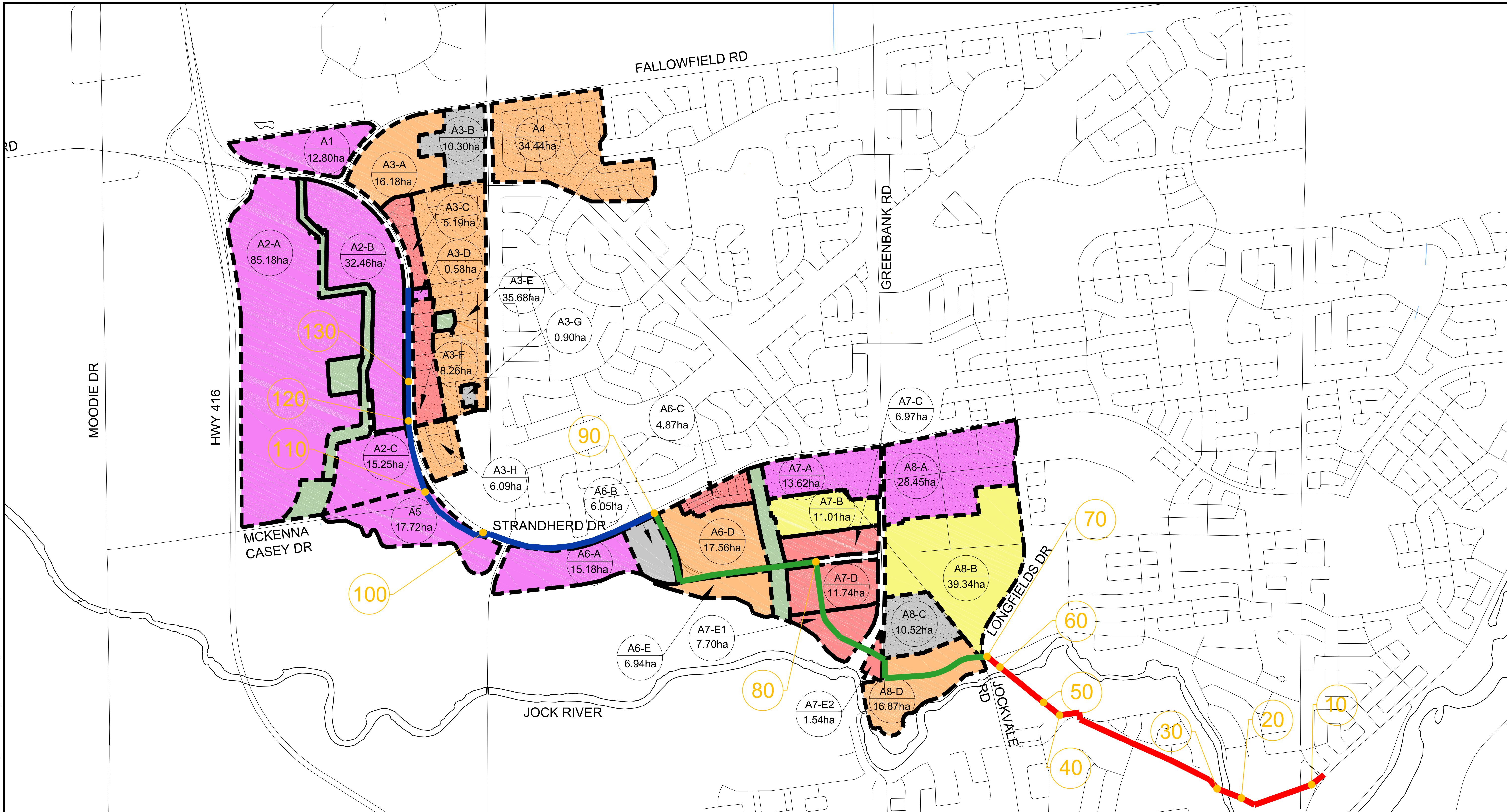
Table 6: Updated Allocation of Commercial, Institutional and Residential Demands to Phases 2 & 3 (Nodes 70 – 130) of the SNC by Collection Area

Collection Area	Upstream Node	Existing / Proposed Development	Existing / Proposed Land Use	Area (ha)	Estimated Number of Residential Units	Population Density (persons / ha)	Comment	Reference
A1	130	Proposed	Commercial	12.80	-	-	O'Keefe Court – Conceptual site plan shows proposed commercial.	Conceptual Plans for O'Keefe Court
A2-A	130	Proposed	Commercial	85.18	-	-	CitiGate – Analysis uses same approach as the design for CitiGate.	Detailed Servicing and SWM Report (Phase 1) (Novatech, 2014)
A2-B	130	Proposed	Commercial	32.46	-	-		
A2-C	120	Proposed	Commercial (ex. Snow dump)	15.25	-	-	Existing snow dump facility assumed to be future commercial.	Functional Design Report and Update – SNC Phase 2 and 3 (Dillon, 2012)
A3-A	130	Proposed	Low Density Residential	16.48	461	95.2	Havencrest – Existing single family units.	Havencrest Design Report (IBI, 2013)
A3-B	130	Existing	Institutional	10.30	-	-	Cedarview Middle School and Cedarview Alliance Church.	Aerial Photos / Site Visits
A3-C	130	Existing	Medium Density Residential	5.19	311	162	Existing townhouse units.	
A3-D	130	Existing	Commercial	0.58	-	-	Existing commercial buildings.	
A3-E	130	Existing	Low Density Residential	35.68	999	95.2	Existing single family units.	
A3-F	130	Existing	Medium Density Residential	8.26	496	162.0	Existing townhouse units.	
A3-G	130	Existing	Institutional	0.90	-	-	Ottawa Torah Centre Chibad.	
A3-H	120	Existing	Low Density Residential	6.09	171	95.2	Existing single family units.	
A4	130	Existing	Low Density Residential	34.44	964	95.2	Existing single family units currently serviced by Jockvale pump station; to be redirected to SNC.	Functional Design Report and Update – SNC Phase 2 and 3 (Dillon, 2012); based on 2011 Census.
A5	110	Proposed	Commercial	17.72	-	-	Proposed commercial south of McKenna Casey Drive.	Site Visits
A6-A	100	Proposed	Institutional	20.70	-	-	Proposed school site on Minto property.	Conceptual Plan for Lands Adjacent the Kennedy-Burnett SWMF provided by Minto (2015)
A6-B	90	Existing	Medium Density Residential	4.87	292	162.0	Existing townhouse units.	Aerial Photos / Site Visits
A6-C	90	Proposed	Low Density Residential	10.11	283	95.2	Proposed single family units on lands owned by Minto.	Conceptual Plans for Lands Adjacent the Kennedy-Burnett SWMF provided by land owners.
A6-D	90	Proposed	Low Density Residential	5.59	157	95.2	Proposed single family units on lands owned by Mion.	
A6-E	90	Proposed	Low Density Residential	7.24	203	95.2	Proposed single family units on lands owned by Pavic / Braovac.	
A7-A	80	Existing	Commercial	13.62	-	-	Existing large retail stores (commercial).	Aerial Photos
A7-B	80	Proposed	High Density Residential	11.01	826	135.0	Proposed high density units on lands owned by Richcraft / Trinity.	Conceptual Plans for Lands Adjacent the Kennedy-Burnett SWMF provided by land owners.
A7-C	80	Proposed	Medium Density Residential	6.97	418	162.0	Proposed Medium density units on lands owned by Mion.	
A7-D	80	Proposed	Medium Density Residential	11.74	704	162.0	Proposed Medium density units on lands owned by Caivan.	
A7-E1/E2	80	Proposed	Medium Density Residential	9.24	554	162.0	Proposed Medium density units on lands owned by Claridge.	
A8-A	80	Existing	Commercial	28.45	-	-	Existing Barrhaven Market Place (commercial).	Aerial Photos / Site Visits
A8-B	80	Proposed	High Density Residential	39.34	2951	135.0	Future development similar to Ampersands development.	Site Visits
A8-C	80	Existing	Institutional	10.52	-	-	Existing St. Joseph High School.	Aerial Photos / Site Visits
A8-D	80	Proposed	Low Density Residential	16.87	1012	162.0	Proposed 600 low density residential units.	Functional Design Report and Update – SNC Phase 2 and 3 (Dillon, 2012)

Suite 200, 240 Michael Cowpland Drive, Ottawa ON K2M 1P6 Tel: 613.254.9643 Fax: 613.254.5867 www.novatech-eng.com

Attachment 1

Sanitary Drainage Areas and Land Use



LEGEND

- EXISTING / PROPOSED HIGH DENSITY RESIDENTIAL
- EXISTING / PROPOSED MEDIUM DENSITY RESIDENTIAL
- EXISTING / PROPOSED LOW DENSITY RESIDENTIAL
- EXISTING / PROPOSED COMMERCIAL
- EXISTING / PROPOSED INSTITUTIONAL
- OTHER LANDS (OPEN SPACE, PARKS, AND SWMFS)
- SOUTH NEPEAN COLLECTOR PHASE 1
- SOUTH NEPEAN COLLECTOR PHASE 2
- SOUTH NEPEAN COLLECTOR PHASE 3
- 80 SOUTH NEPEAN COLLECTOR NODE ID

NOVATECH
Engineers, Planners & Landscape Architects
Suite 200, 240 Michael Cowpland Drive
Ottawa, Ontario, Canada K2M 1P6
Telephone (613) 254-9643
Facsimile (613) 254-5867
Website www.novatech-eng.com

SOUTH NEPEAN COLLECTOR SEWER

SANITARY DRAINAGE AREAS AND LAND USE

SCALE	DATE	JOB	FIGURE
1:20 000	MAY 2016	115075	FIG. 1

M:\2015\115075\CAD\Design\Figures\DSK\DSK08_SANArea\DSK08_SANArea.dwg, DSK08, Aug 20, 2015 - 1:32pm, nsmit

Attachment 2

Sewer Flow Calculations

PROJECT #:	115075
DESIGNED BY:	CMS
CHECKED BY:	MJP
DATE:	August 20, 2015

SANITARY SEWER DESIGN SHEET

South Nepean Collector - Phase 2 & 3

Theoretical Current Operational Peak Wastewater Flow

NOVATECH
Engineers, Planners & Landscape Architects

Location			Areas				Population				Individual Design Flows			Cumulative Design Flows				
Area I.D.	Existing Land Use	Upstream Node	Gross Commercial Area (ha)	Gross Institutional Area (ha)	Gross Residential Area (ha)	Total Gross Area (ha)	Residential Popultation Density (people / ha)	Individual Residential Population	Cumulative Residential Population	Residential Peaking Factor (Harmon Eqn[1])	Commercial Peak Flow Rate[2] (17,000 L/ha/d) (L/s)	Institutional Peak Flow Rate[2] (10,000 L/ha/d) (L/s)	Infiltration / Inflow Rate (0.05 L/s/ha) (L/s)	Commercial (L/s)	Institutional (L/s)	Infiltration / Inflow (L/s)	Residential Peak Flow Rate (300 L/cap/d) (L/s)	Cumulative Peak Design Flow (L/s)
A1	Open Space	130				0.00					0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
A2-A	Open Space	130				0.00					0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
A2-B	Open Space	130				0.00					0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
A3-A	Open Space	130				0.00					0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
A3-B	Institutional	130		10.30		10.30					0.0	1.2	0.5	0.0	1.2	0.5	0.0	1.7
A3-C	Medium Density Residential	130			5.19	5.19	162.0	841	841	2.71	0.0	0.0	0.3	0.0	1.2	0.8	7.9	9.9
A3-D	Commercial	130	0.58			0.58			841	2.71	0.1	0.0	0.0	0.1	1.2	0.8	7.9	10.0
A3-E	Low Density Residential	130			35.68	35.68	95.2	3397	4238	2.39	0.0	0.0	1.8	0.1	1.2	2.6	35.1	39.0
A3-F	Medium Density Residential	130			8.26	8.26	162	1338	5576	2.32	0.0	0.0	0.4	0.1	1.2	3.0	44.9	49.2
A3-G	Institutional	130		0.90		0.90			5576	2.32	0.0	0.1	0.0	0.1	1.3	3.0	44.9	49.4
A4	Low Density Residential*	130				0.00			5576	2.32	0.0	0.0	0.0	0.1	1.3	3.0	44.9	49.4
A2-C	Snow Dump Facility	120				0.00			5576	2.32	0.0	0.0	0.0	0.1	1.3	3.0	44.9	49.4
A3-H	Low Density Residential	120			6.09	6.09	95.2	580	6155	2.30	0.0	0.0	0.3	0.1	1.3	3.4	49.1	53.8
A5	Open Space	110				0.00			6155	2.30	0.0	0.0	0.0	0.1	1.3	3.4	49.1	53.8
A6-A	Open Space	100				0.00			6155	2.30	0.0	0.0	0.0	0.1	1.3	3.4	49.1	53.8
A6-B	Open Space	100				0.00			6155	2.30	0.0	0.0	0.0	0.1	1.3	3.4	49.1	53.8
A6-C	Medium Density Residential	90			4.87	4.87	162.0	789	6944	2.27	0.0	0.0	0.2	0.1	1.3	3.6	54.6	59.6
A6-D	Open Space	90				0.00			6944	2.27	0.0	0.0	0.0	0.1	1.3	3.6	54.6	59.6
A6-E	Open Space	90				0.00			6944	2.27	0.0	0.0	0.0	0.1	1.3	3.6	54.6	59.6
A7-A	Commercial	90	13.62			13.62			6944	2.27	2.7	0.0	0.7	2.8	1.3	4.3	54.6	63.0
A7-B	Open Space	90				0.00			6944	2.27	0.0	0.0	0.0	2.8	1.3	4.3	54.6	63.0
A7-C	Open Space	90				0.00			6944	2.27	0.0	0.0	0.0	2.8	1.3	4.3	54.6	63.0
A7-D	Open Space	90				0.00			6944	2.27	0.0	0.0	0.0	2.8	1.3	4.3	54.6	63.0
A7-E1/E2	Open Space	90				0.00			6944	2.27	0.0	0.0	0.0	2.8	1.3	4.3	54.6	63.0
A8-A	Commercial	80	28.45			28.45			6944	2.27	5.6	0.0	1.4	8.4	1.3	5.7	54.6	70.0
A8-B	Open Space	80				0.00			6944	2.27	0.0	0.0	0.0	8.4	1.3	5.7	54.6	70.0
A8-C	Institutional	80		10.52		10.52			6944	2.27	0.0	1.2	0.5	8.4	2.5	6.2	54.6	71.8
A8-D	Open Space	80				0.00			6944	2.27	0.0	0.0	0.0	8.4	2.5	6.2	54.6	71.8
ROW Along SNC Sewer Alignment	-	80				14.34			6944	2.27	0.0	0.0	0.7	8.4	2.5	6.9	54.6	72.5
TOTAL		***80***	***42.65***	***21.72***	***60.09***	***138.80***	***-***	***6944***	***6944***	***2.27***	***8.4***	***2.5***	***6.9***	***8.4***	***2.5***	***6.9***	***54.6***	***72.5***

Residential Land Use	Population Density (Units / ha)	Persons per Unit	Persons per ha
Low Density (singles and semis)	26 – 28 (28 used)	2.7 – 3.4 (3.4 used)	95.2
Medium Density (row/townhouse)	50 – 60 (60 used)	2.7	162.0
High Density (apartments)	60 – 75 (75 used)	1.8	135.0

Notes:

1. Harmon Equation = 1 + [14 / (4+(P/1000)$^{1/2}$)] x K

Where: P = population; K = correction factor = 0.6

2. Instituional / Commercial Peaking Factor = 1.0

Reported Design Flows / Assumptions:

1. Area A4: Existing single family units currently serviced by Jockvale pump station; currently not directed to SNC

PROJECT #: 115075
DESIGNED BY: CMS
CHECKED BY: MJP
DATE: August 20, 2015

SANITARY SEWER DESIGN SHEET

South Nepean Collector - Phase 2 & 3

Theoretical Future Full Service Peak Wastewater Flow

NOVATECH
Engineers, Planners & Landscape Architects

Location			Areas				Population				Individual Design Flows			Cumulative Design Flows				
Area I.D.	Existing / Proposed Land Use	Upstream Node	Gross Commercial Area (ha)	Gross Institutional Area (ha)	Gross Residential Area (ha)	Total Gross Area (ha)	Residential Popultation Density (people / ha)	Individual Residential Population	Cumulative Residential Population	Residential Peaking Factor (Harmon Eqn[1])	Commercial Peak Flow Rate[2] (50,000 L/ha/d) (L/s)	Institutional Peak Flow Rate[2] (50,000 L/ha/d) (L/s)	Infiltration / Inflow Rate (0.28 L/s/ha) (L/s)	Commercial (L/s)	Institutional (L/s)	Infiltration / Inflow (L/s)	Residential Peak Flow Rate (350 L/cap/d) (L/s)	Cumulative Peak Design Flow (L/s)
A1	Commercial	130	12.80			12.80					11.1	0.0	3.6	11.1	0.0	3.6	0.0	14.7
A2-A	Commercial	130	85.18			85.18					73.9	0.0	23.9	85.1	0.0	27.4	0.0	112.5
A2-B	Commercial	130	32.46			32.46					28.2	0.0	9.1	113.2	0.0	36.5	0.0	149.8
A3-A	Low Density Residential	130			16.18	16.18	95.2	1540	1540	3.67	0.0	0.0	4.5	113.2	0.0	41.1	22.9	177.2
A3-B	Institutional	130		10.30		10.30			1540	3.67	0.0	8.9	2.9	113.2	8.9	43.9	22.9	189.0
A3-C	Medium Density Residential	130			5.19	5.19	162.0	841	2381	3.53	0.0	0.0	1.5	113.2	8.9	45.4	34.0	201.6
A3-D	Commercial	130	0.58			0.58			2381	3.53	0.5	0.0	0.2	113.7	8.9	45.6	34.0	202.2
A3-E	Low Density Residential	130			35.68	35.68	95.2	3397	5778	3.19	0.0	0.0	10.0	113.7	8.9	55.5	74.6	252.8
A3-F	Medium Density Residential	130			8.26	8.26	162	1338	7116	3.10	0.0	0.0	2.3	113.7	8.9	57.9	89.4	269.9
A3-G	Institutional	130		0.90		0.90			7116	3.10	0.0	0.8	0.3	113.7	9.7	58.1	89.4	270.9
A4	Low Density Residential	130			34.44	34.44	95.2	3279	10395	2.94	0.0	0.0	9.6	113.7	9.7	67.8	123.7	314.9
A2-C	Commercial (ex. snow dump)	120	15.25			15.25			10395	2.94	13.2	0.0	4.3	127.0	9.7	72.0	123.7	332.4
A3-H	Low Density Residential	120			6.09	6.09	95.2	580	10974	2.91	0.0	0.0	1.7	127.0	9.7	73.7	129.6	340.0
A5	Commercial	110	17.72			17.72			10974	2.91	15.4	0.0	5.0	142.4	9.7	78.7	129.6	360.3
A6-A	Commercial	100	15.18			15.18			10974	2.91	13.2	0.0	4.3	155.5	9.7	82.9	129.6	377.8
A6-B	Institutional	100		6.05		6.05			10974	2.91	0.0	5.3	1.7	155.5	15.0	84.6	129.6	384.7
A6-C	Medium Density Residential	90			4.87	4.87	162.0	789	11763	2.88	0.0	0.0	1.4	155.5	15.0	86.0	137.4	393.9
A6-D	Low Density Residential	90			17.56	17.56	95.2	1672	13435	2.83	0.0	0.0	4.9	155.5	15.0	90.9	153.8	415.2
A6-E	Low Density Residential	90			6.94	6.94	95.2	661	14096	2.81	0.0	0.0	1.9	155.5	15.0	92.9	160.2	423.6
A7-A	Commercial	90	13.62			13.62			14096	2.81	11.8	0.0	3.8	167.4	15.0	96.7	160.2	439.2
A7-B	High Density Residential	90			11.01	11.01	135.0	1486	15582	2.76	0.0	0.0	3.1	167.4	15.0	99.8	174.3	456.4
A7-C	Medium Density Residential	90			6.97	6.97	162.0	1129	16711	2.73	0.0	0.0	2.0	167.4	15.0	101.7	184.9	468.9
A7-D	Medium Density Residential	90			11.74	11.74	162.0	1902	18613	2.68	0.0	0.0	3.3	167.4	15.0	105.0	202.4	489.7
A7-E1/E2	Medium Density Residential	90			9.24	9.24	162.0	1497	20110	2.65	0.0	0.0	2.6	167.4	15.0	107.6	215.9	505.8
A8-A	Commercial	80	28.45			28.45			20110	2.65	24.7	0.0	8.0	192.0	15.0	115.5	215.9	538.5
A8-B	High Density Residential	80			39.34	39.34	135.0	5311	25421	2.55	0.0	0.0	11.0	192.0	15.0	126.6	262.4	596.0
A8-C	Institutional	80		10.52		10.52			25421	2.55	0.0	9.1	2.9	192.0	24.1	129.5	262.4	608.1
A8-D	Low Density Residential	80			16.87	16.87	120.9	2040	27461	2.52	0.0	0.0	4.7	192.0	24.1	134.2	279.8	630.2
ROW Along SNC Sewer Alignment	-	80				14.34			27461	2.52	0.0	0.0	4.0	192.0	24.1	138.2	279.8	634.2
TOTAL		***80***	***221.24***	***27.77***	***230.38***	***493.73***	***-***	***27461***	***27461***	***2.52***	***192.0***	***24.1***	***134.2***	***192.0***	***24.1***	***138.2***	***279.8***	***634.2***

Residential Land Use	Population Density (Units / ha)	Persons per Unit	Persons per ha
Low Density (singles and semis)	26 – 28 (28 used)	2.7 – 3.4 (3.4 used)	95.2
Medium Density (row/townhouse)	50 – 60 (60 used)	2.7	162.0
High Density (apartments)	60 – 75 (75 used)	1.8	135.0

Notes:

1. Harmon Equation = $1 + [14 / (4+(P/1000)^{1/2})] \times K$

Where: P = population; K = correction factor = 1.0

2. Instituional / Commercial Peaking Factor = 1.5

Reported Design Flows / Assumptions:

1. Area A4: Existing single family units currently serviced by Jockvale pump station to be redirected to SNC

2. Area A8-D: proposed 600 medium density residential units

THIS PRIOR NOVETECH SNC DESIGN SHEET HAD DESIGN FLOWS AT 423.6 L/S AFTER AREA ID "A6-E'.

THE DSEL EVALUATION WITH NEW PARAMETERS AT THIS SAME NODE WITH CONSERVANCY WEST AND EAST INCLUDED IS ~401.05 < 423.6 L/S

M:\2015\115075\DATA\Calculations\Sewer Calcs\SAN\20150820-SAN-Hydraulic Review.xlsx

Attachment 3

Sanitary Sewer Design Sheets (Phase 2)

SOUTH NEPEAN COLLECTOR (PHASE 2)
SANITARY SEWER DESIGN SHEET

MAY 26, 2016
JOB# 115075

NOVATECH
Engineers, Planners & Landscape Architects

LOCATION			Area					Population				Individual Design Flows			Cumulative Design Flows					PROPOSED SEWER						
From MH	To MH	Upstream Node	Gross Commercial Area (ha)	Gross Institutional Area (ha)	Gross Residential Area (ha)	Right-of-Way (ha)	Total Gross Area (ha)	Residential Popultation Density (people / ha)	Individual Residential Population	Cumulative Residential Population	Residential Peaking Factor (Harmon Eqn[1])	Commercial Peak Flow Rate[2] (50,000 L/ha/d) (L/s)	Institutional Peak Flow Rate[2] (50,000 L/ha/d) (L/s)	Infiltration / Inflow Rate (0.28 L/s/ha) (L/s)	Commercial (L/s)	Institutional (L/s)	Infiltration / Inflow (L/s)	Residential Peak Flow Rate (350 L/cap/d) (L/s)	Cumulative Peak Design Flow (L/s)	Length (m)	Pipe Size (mm)	Type	Slope %	Capacity (L/s)	Full Flow Velocity (m/s)	Ratio (Q/Qfull)
MHSA 1	MHSA 2	90	192.79	17.25	174.17	0.00	384.21	1678	20110	20110	2.65	167.352	14.97	107.58	167.4	15.0	107.6	215.9	505.8	57.3	900	CONC	0.10	597.2	0.91	85%
MHSA 2	MHSA 3	90																	505.8	57.3	900	CONC	0.10	597.2	0.91	85%
MHSA 3	MHSA 4	90																	505.8	73.9	900	CONC	0.10	597.2	0.91	85%
MHSA 4	MHSA 5	90																	505.8	34.6	900	CONC	0.10	597.2	0.91	85%
MHSA 5	MHSA 6	90																	505.8	42.8	900	CONC	0.10	597.2	0.91	85%
MHSA 6	MHSA 7	90																	505.8	84.4	900	CONC	0.10	597.2	0.91	85%
MHSA 7	MHSA 8	90																	505.8	16.5	900	CONC	0.10	597.2	0.91	85%
MHSA 8	MHSA 9	90																	505.8	85.4	900	CONC	0.10	597.2	0.91	85%
MHSA 9	MHSA 10	90																	505.8	70.6	900	CONC	0.10	597.2	0.91	85%
MHSA 10	MHSA 11	90																	505.8	70.6	900	CONC	0.10	597.2	0.91	85%
MHSA 11	MHSA 12	90																	505.8	77.8	900	CONC	0.10	597.2	0.91	85%
MHSA 12	MHSA 13	90																	505.8	77.8	900	CONC	0.10	597.2	0.91	85%
MHSA 13	MHSA 14	90																	505.8	77.8	900	CONC	0.10	597.2	0.91	85%
MHSA 14	MHSA 15	90																	505.8	25.4	900	CONC	0.10	597.2	0.91	85%
MHSA 15	MHSA 16	90																	505.8	34.2	900	CONC	0.10	597.2	0.91	85%
MHSA 16	MHSA 17	90																	505.8	86.7	900	CONC	0.10	597.2	0.91	85%
MHSA 17	MHSA 18	90																	505.8	34.3	900	CONC	0.10	597.2	0.91	85%
MHSA 18	MHSA 19	90																	505.8	68.6	900	CONC	0.10	597.2	0.91	85%
MHSA 19	MHSA 20	90																	505.8	65.5	900	CONC	0.10	597.2	0.91	85%
MHSA 20	MHSA 21	80	221.24	27.77	230.38	14.34	493.73	256	7351	27461	2.52	192.049	24.11	138.24	192.0	24.1	138.2	279.8	634.2	18.2	1050	CONC	0.10	900.9	1.01	70%
MHSA 21	MHSA 22	80																	634.2	81.9	1050	CONC	0.10	900.9	1.01	70%
MHSA 22	MHSA 23	80																	634.2	84.7	1050	CONC	0.10	900.9	1.01	70%
MHSA 23	MHSA 24	80																	634.2	77.4	1050	CONC	0.10	900.9	1.01	70%
MHSA 24	MHSA 25	80																	634.2	45.5	1050	CONC	0.10	900.9	1.01	70%
MHSA 25	MHSA 26	80																	634.2	35.8	1050	CONC	0.10	900.9	1.01	70%
MHSA 26	MHSA 27	80																	634.2	83.3	1050	CONC	0.10	900.9	1.01	70%
MHSA 27	MHSA 28	80																	634.2	74.4	1050	CONC	0.10	900.9	1.01	70%
MHSA 28	MHSA 29	80																	634.2	77.3	1050	CONC	0.10	900.9	1.01	70%
MHSA 29	MHSA 30	80																	634.2	83.8	1050	CONC	0.10	900.9	1.01	70%
MHSA 30	MHSA 31	80																	634.2	42.3	1050	CONC	0.10	900.9	1.01	70%
MHSA 31	MHSA 32	80																	634.2	100.6	1050	CONC	0.10	900.9	1.01	70%
MHSA 32	MHSA 33	80																	634.2	13.9	1050	CONC	0.10	900.9	1.01	70%
MHSA 33	MHSA 34	80																	634.2	99.9	1050	CONC	0.10	900.9	1.01	70%
MHSA 34	MHSA 35	80																	634.2	99.9	1050	CONC	0.10	900.9	1.01	70%
MHSA 35	MHSA 36	80																	634.2	88.7	1050	CONC	0.10	900.9	1.01	70%
MHSA 36	MHSA 37	80																	634.2	88.8	1050	CONC	0.10	900.9	1.01	70%
MHSA 37	MHSA 38	80																	634.2	90.3	1050	CONC	0.10	900.9	1.01	70%
MHSA 38	MHSA 39	80																	634.2	87.5	1050	CONC	0.10	900.9	1.01	70%

Design Parameters:

Residential Land Use	Population Density (Units / ha)	Persons per Unit	Persons per ha
Low Density (singles / semis)	26 – 28 (28 used)	2.7 – 3.4 (3.4 used)	95.2
Medium Density (row / townhouse)	50 – 60 (60 used)	2.7	162.0
High Density (apartments)	60 – 75 (75 used)	1.8	135.0

Notes:

1. Harmon Equation = $1 + [14 / (4+(P/1000)^{1/2})] \times K$

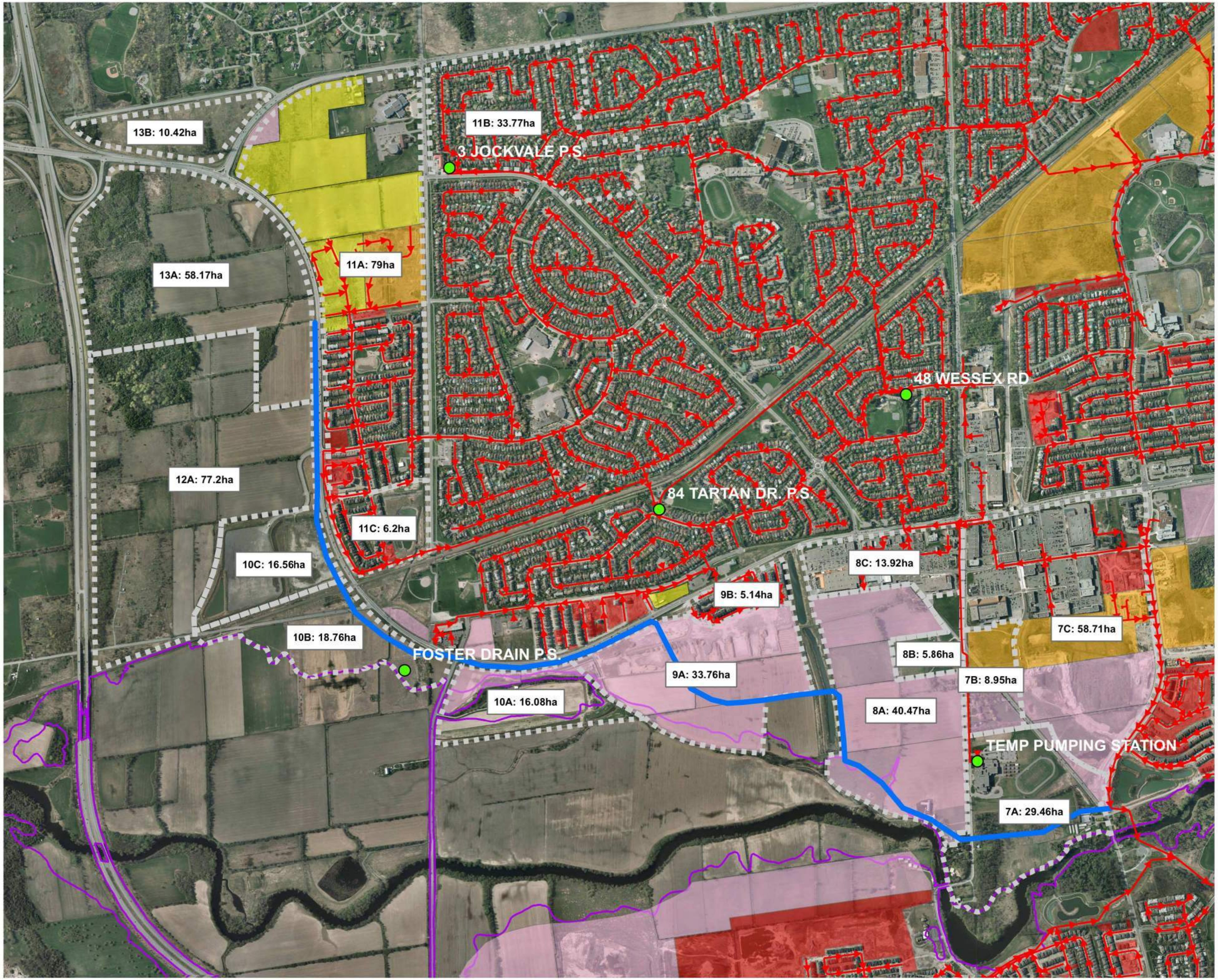
Where: P = population; K = correction factor = 1.0

2. Instituional / Commercial Peaking Factor = 1.5

Reported Design Flows / Assumptions:

1. Area A4: Existing single family units currently serviced by Jockvale pump station to be redirected to SNC

2. Area A8-D: proposed 600 medium density residential units



Ottawa

City of Ottawa
South Nepean Collector

Figure 01
Existing Sanitary Network and Collection Areas

- Pump Station
- Existing Sanitary Main (With Flow Direction)
- Proposed Alignment for South Nepean Collector
- Collection Area

DEVELOPMENT STATUS

- Registered
- Draft Approved
- Pending
- No Plan
- Floodplain

NOT TO SCALE

MAP DRAWING INFORMATION:
DATA PROVIDED BY THE CITY OF OTTAWA

MAP CREATED BY: BC
MAP CHECKED BY: MBM
MAP PROJECTION: NO PROJECTION

FILE LOCATION: \\Dillon.ca\dillon_dfs\Ottawa\Ottawa CA\CAD\2011\115681\Design_GIS\MXD\Figure01c_ExistingSanitaryNetwork.mxd

DILLON CONSULTING

PROJECT: 11-5681
STATUS: FINAL
DATE: 18/07/12

Table 5.1: Allocation of Commercial/Institutional and Residential Demands to SNC by Collection Area

Collection Area	Discharging Node	Estimated from GIS			City of Ottawa VURL Data			Other Space [1] (ha)	Population (PE)	Residential Density (PE/net ha)	Comments	Additional Source(s)
		Gross Institutional/Commercial (ha)	Gross Residential (ha)	Gross Area (ha)	Net Residential (ha)	Units (#)	Unit Density (#/ha)					
7A	70	13.5	7.4	29.5	4.0	605	0.3	9.1	1637	4.25	Flow calculations include St Joseph H.S. Pump Station firm capacity of 7.0 L/s Additional 600 units (TAC)	3.4ppu (TAC)
7B		0.0	9.24	9.24	6.23	1474	136.7	3.0	3321	638.8	Population from split VURL allocated by area. VURL parcel id 323 - inconsistency between net and gross reported area.	2.7ppu (TAC)
8A		0.0	40.0	40.0	24.1	4462	185.1	15.9	12047.4	499.9		2.7ppu (TAC)
8B		5.9	0.0	5.9	0.0	0	0	0.0			Future Commercial area	
8C		13.9	0.0	13.9	0.0	0	0	0.0			Commercial area includes Home Depot	
9A	80	0.0	33.8	33.8	18.6	635	34.1	15.2	2210	116.2		3.4ppu (TAC)
10A	90	0.0	16.1	16.1	9.7	451	28.0	6.4	1533.4	158.0	Assume net population = 60% gross.	3.4ppu (TAC)
10B	100	18.8	0.0	35.3	0.0	0	0	16.5			Allocated as potential future I/C use as directed by TAC	
10C	110	16.6	0.0	35.3	0.0	0	0	18.7			Area includes current Municipal Snow Dump. Flow allowance is made for potential future I/C use	
11C		0.0	6.2	6.2	Note 2			2.5	306	82.7	This area is south of '11 block' in the existing development	From IBI Apr 2010 Report Figure 1
11A	120	12.5	66.5	79.0				26.6	3923	98.3	Institutional includes 4.38ha church site and 6.89 ha institution at northeast corner, as well and Claridge Commercial (0.56ha) and DCR/Phoenix Commercial (0.64ha)	From IBI Apr2010 Report Figure 1
11B		0.0	37.0	37.0				14.8	1550	69.8	Presently serviced by Jockvale pump station; to be redirected to SNC.	Estimated from 2011 Census Block data
12A		77.2	0.0	77.2				0.0			Allow sanitary peak flow 79.0 L/s	Novatech, Employment Lands Report, Revised Jan 2012
13A	130	58.5	0.0	58.5				0.0			Allow sanitary peak flow 62.8 L/s plus Collection Area 13B, total 82.2 L/s	
13B		12.5	0.0	12.5				0.0			Allow sanitary peak flow 19.4 L/s; gravity discharge to Collection Area 13A	IBI/Novatech

Notes:
1. Other space includes other residential space accounting for the difference between gross area (measured with GIS) and net area (provided in VURL data), such as sidewalks, roads, greenspace, etc.
2. Collection Area 11A and 11B population and land use as identified under Additional Source(s). Other space reported as 60% of gross residential area, consistent with VURL average.

K:\PROJECTS\DRAFT\2011\115681\Design\Sewer Design Sheets\115681 - Sewer Design Sheet - Revised April 20.xls

2012 Operational current day

CITY OF OTTAWA
SOUTH NEPEAN COLLECTOR SEWER
SANITARY SEWER DESIGN SHEET - Operational Service (Average Flow Design Parameters)

TRIBUTARY AREA	Design Factors	LOCATION FROM	LOCATION TO	AREA (ha) Gross ICI	Net ICI	Other ICI space (Green, Sidewalks, roads)	Gross RESIDENTIAL Area	Net Residential Area	Other Res (Green, Sidewalks, roads)	TOTAL AREA (Gross ICI plus Gross Residential)	INDIVIDUAL POP	DENSITY (po./ha.)	CUMULATIVE POP	AREA (ha.)	RESIDENTIAL PEAKING FACTOR	RESIDENT. FLOW (L/s)	COMMERCIAL & INSTITUTION PEAKING FACTOR	CUM. AREA	I.C.I. FLOW (l/s)	INFIL. INFLOW Q(p) (L/s)	PEAK DESIGN FLOW Q(d) (L/s)
13A	1			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0		0	0.0	4.50	0.00	1.00	0.00	0.00	0.00	0.00
13B	1		Node 130	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0		0	0.0	4.50	0.00	1.00	0.00	0.00	0.00	0.00
12A	1	Node 130		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0		0	0.0	4.50	0.00	1.00	0.00	0.00	0.00	0.00
11A	1			12.5	9.4	3.1	66.5	8.0	58.5	79.0	1196	148.76	1196	79.0	3.75	15.57	1.00	12.50	2.00	3.95	21.52
11B	1		Node 120	0.0	0.0	0.0	37.0	22.2	14.8	37.0	1550	69.82	2746	116.0	3.47	33.13	1.00	12.50	2.00	5.80	40.93
11C	1	Node 120		0.0	0.0	0.0	6.2	3.7	2.5	6.2	306	82.26	3052	122.2	3.44	36.41	1.00	12.50	2.00	6.11	44.52
10C	1		Node 110	16.6	12.5	4.2	0.0	0.0	0.0	16.6	0		3052	138.8	3.44	36.41	1.00	29.10	4.66	6.94	48.01
10B	1	Node 110	Node 100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0		3052	138.8	3.44	36.41	1.00	29.10	4.66	6.94	48.01
10A	1	Node 100	Node 90	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0		3052	138.8	3.44	36.41	1.00	29.10	4.66	6.94	48.01
9A	1	Node 90	Node 80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0		3052	138.8	3.44	36.41	1.00	29.10	4.66	6.94	48.01
8A	1	Node 80		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0		3052	138.8	3.44	36.41	1.00	29.10	4.66	6.94	48.01
8B	1			5.9	4.4	1.5	0.0	0.0	0.0	5.9	0		3052	144.7	3.44	36.41	1.00	35.00	5.60	7.24	49.25
8C	1			13.9	10.4	3.5	0.0	0.0	0.0	13.9	0		3052	158.6	3.44	36.41	1.00	48.90	7.82	7.93	52.17
7A	1			13.5	10.1	3.4	16.0	1.4	14.6	29.5	17	12.14	3069	188.1	3.43	36.59	1.00	62.40	9.98	9.41	55.93
7B	1		Node 70	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0		3069	188.1	3.43	36.59	1.00	62.40	9.98	9.41	55.93
										188.1											

TRIBUTARY AREA	LENGTH (m)	GROUND ELEVATION (m)	DEPTH OF COVER (m)	PIPE SIZE (m)	INVERT 1 (m)	INVERT 2 (m)	PROPOSED SEWER PIPE TYPE	GRADE	CAPACITY (L/s)	Q(d)/Q(c)	VELOCITY at capacity (m/s)	OPERATIONAL DESIGN DEPTH (m)	VELOCITY (m/s)
13A													
13B		95.14	5.43	0.750		88.96							
12A													
11A													
11B	531.89	93.60	4.42	0.750	88.96	88.43	Conc.	0.10%	353.24	0.13	0.80	0.20	0.58
11C													
10C	497.82	93.44	4.76	0.750	88.43	87.93	Conc.	0.10%	353.24	0.14	0.80	0.20	0.58
10B	603.17	93.03	4.95	0.750	87.93	87.33	Conc.	0.10%	353.24	0.14	0.80	0.20	0.58
10A	430.49	93.75	6.03	0.825	87.33	86.90	Conc.	0.10%	455.17	0.11	0.85	0.21	0.61
9A	1268.65	92.37	5.84	0.900	86.90	85.63	Conc.	0.10%	573.71	0.08	0.90	0.18	0.56
8A													
8B													
8C													
7A													
7B	1448.98	91.24	6.01	1.050	85.63	84.18	Conc.	0.10%	864.51	0.06	1.00	0.18	0.56

DEFAULTS

q=AVERAGE DAILY FLOW	300	L/CAP.D
I=UNIT OF PEAK EXTR.FLOW	0.050	L/Ha.s
Mannings 'n'	0.013	
q=AVERAGE COMMERCIAL AND INSTITUTIONAL	0.16	L/Ha.s

DESIGN	DJG
CHECKED	
TODAY:	7/18/2012

DILLON CONSULTING

Project 11-5681

K:\PROJECTS\DRAFT\2011\115681\Design\Sewer Design Sheets\115681 - Sewer Design Sheet - Revised April 20.xls

2012 Full Service (Peak)

CITY OF OTTAWA

SOUTH NEPEAN COLLECTOR SEWER

SANITARY SEWER DESIGN SHEET - Full Service (Peak Flow Design Parameters)

Sheet 1 of 1

TRIBUTARY AREA		LOCATION		AREA (ha)							INDIVIDUAL		CUMULATIVE		RESIDENTIAL		COMMERCIAL & INSTITUTION			INFIL. INFLOW	PEAK DESIGN
	Design Factors	FROM	TO	Gross ICI	Net ICI	Other ICI space (Green, Sidewalks, roads)	Gross RESIDENTIAL Area	Net Residential Area	Other Res (Sidewalks, roads)	TOTAL AREA (Gross ICI plus Gross Residential)	POP	DENSITY	POP	Total I/C and Res AREA	PEAKING FACTOR	RESIDENT. FLOW	PEAKING FACTOR	I/C CUM. AREA	I/C FLOW (l/s)	Q(p)	FLOW Q(d)
												(pers/net ha.)		(ha.)		(L/s)				(L/s)	(L/s)
13A	1			58.5	43.9	14.6	0.0	0.0	0.0	58.5	0		0	58.5	4.50	0.00	1.50	58.50	50.90	16.38	67.28
13B	1		Node 130	12.5	9.4	3.1	0.0	0.0	0.0	12.5	0		0	71.0	4.50	0.00	1.50	71.00	61.77	19.88	81.65
12A	1	Node 130		77.2	57.9	19.3	0.0	0.0	0.0	77.2	0		0	148.2	4.50	0.00	1.50	148.20	128.93	41.50	170.43
11A	1			12.5	9.4	3.1	66.5	39.9	26.6	79.0	3923	98.32	3923	227.2	3.34	53.09	1.50	160.70	139.81	63.62	256.52
11B	1		Node 120	0.0	0.0	0.0	37.0	22.2	14.8	37.0	1550	69.82	5473	264.2	3.21	71.13	1.50	160.70	139.81	73.98	284.92
11C		Node 120		0.0	0.0	0.0	6.2	3.7	2.5	6.2	306	82.26	5779	270.4	3.19	74.59	1.50	160.70	139.81	75.71	290.11
10C	1		Node 110	16.6	12.5	4.2	0.0	0.0	0.0	16.6	0		5779	287.0	3.19	74.59	1.50	177.30	154.25	80.36	309.20
10B	1	Node 110	Node 100	18.8	14.1	4.7	0.0	0.0	0.0	18.8	0		5779	305.8	3.19	74.59	1.50	196.10	170.61	85.62	330.82
10A	1	Node 100	Node 90	0.0	0.0	0.0	16.1	9.7	6.4	16.1	1533	158.04	7312	321.9	3.09	91.48	1.50	196.10	170.61	90.13	352.22
9A	1	Node 90	Node 80	0.0	0.0	0.0	33.8	18.6	15.2	33.8	2161	116.18	9473	355.7	2.98	114.28	1.50	196.10	170.61	99.60	384.48
8A	1	Node 80		0.0	0.0	0.0	40.0	24.1	15.9	40.0	12047	499.88	21520	395.7	2.62	228.45	1.50	196.10	170.61	110.80	509.85
8B	1			5.9	4.4	1.5	0.0	0.0	0.0	5.9	0		21520	401.6	2.62	228.45	1.50	202.00	175.74	112.45	516.64
8C	1			13.9	10.4	3.5	0.0	0.0	0.0	13.9	0		21520	415.5	2.62	228.45	1.50	215.90	187.83	116.34	532.62
7A	1			13.5	10.1	3.4	16.5	5.2	11.3	30.0	1637	314.81	23157	445.5	2.59	242.84	1.50	229.40	199.58	124.74	567.16
7B	1		Node 70	0.0	0.0	0.0	9.2	6.2	3.0	9.2	3980	638.84	27137	454.7	2.52	277.05	1.50	229.40	199.58	127.32	603.94
							225.3	129.7		454.7	27,137.0										

TRIBUTARY AREA							PROPOSED SEWER					PEAK DESIGN	
	LENGTH	GROUND ELEVATION	DEPTH OF COVER	PIPE SIZE	INVERT 1	INVERT 2	PIPE TYPE	GRADE	CAPACITY	Q(d)/Q(c)	VELOCITY at capacity	DEPTH	VELOCITY
	(m)	(m)	(m)	(m)	(m)	(m)			(L/s)		(m/s)	(m)	(m/s)
13A													
13B		95.14	5.43	0.750		88.96							
12A													
11A													
11B	531.89	93.60	4.42	0.750	88.96	88.43	Conc.	0.10%	353.24	0.81	0.80	0.53	0.90
11C													
10C	497.82	93.44	4.76	0.750	88.43	87.93	Conc.	0.10%	353.24	0.88	0.80	0.55	0.91
10B	603.17	93.03	4.95	0.750	87.93	87.33	Conc.	0.10%	353.24	0.94	0.80	0.58	0.92
10A	430.49	93.75	6.03	0.825	87.33	86.90	Conc.	0.10%	455.17	0.77	0.85	0.55	0.95
9A	1268.65	92.37	5.84	0.900	86.90	85.63	Conc.	0.10%	573.71	0.67	0.90	0.55	0.97
8A													
8B													
8C													
7A													
7B	1448.98	91.24	6.01	1.050	85.63	84.18	Conc.	0.10%	864.51	0.70	1.00	0.64	1.07
	4,781.0												

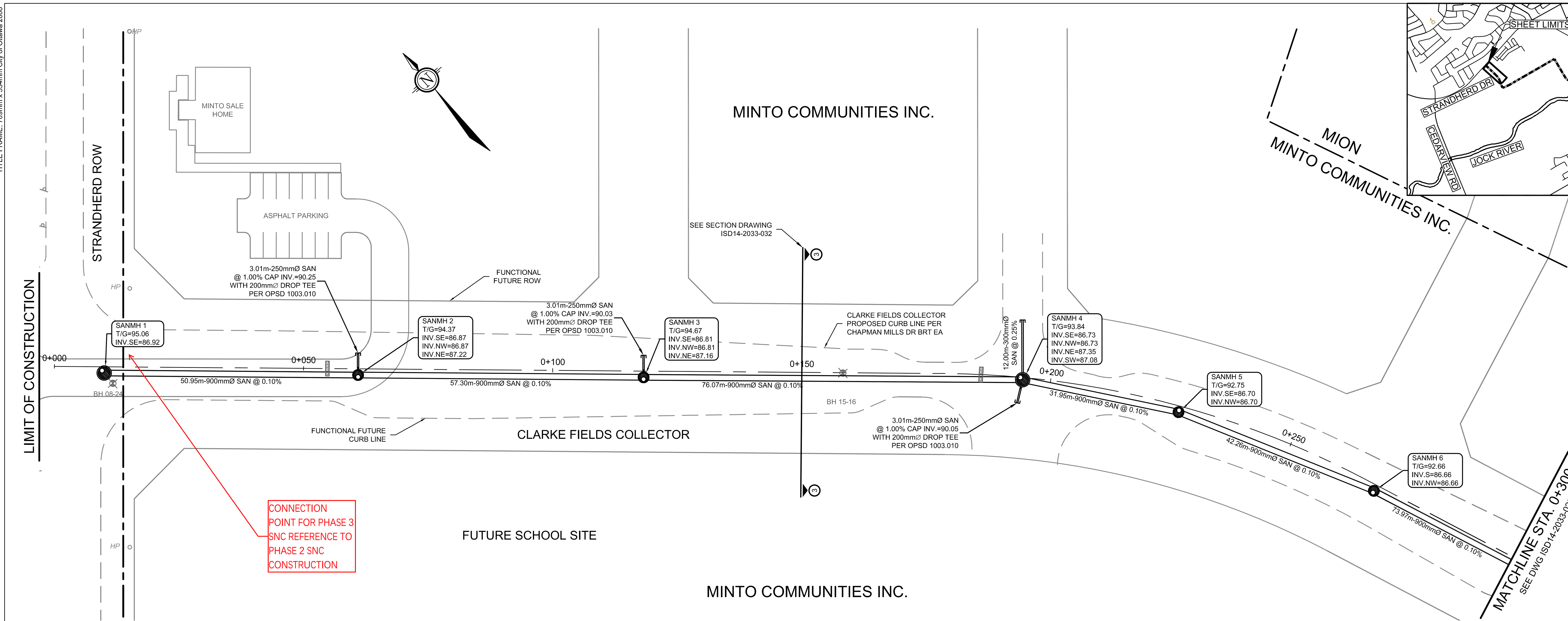
DEFAULTS

q=AVERAGE DAILY FLOW	350	L/CAP.D
I=UNIT OF PEAK EXTR.FLOW	0.280	L/Ha.s
Mannings 'n'	0.013	
q=AVERAGE COMMERCIAL AND INSTITUTIONAL	0.58	L/Ha.s

DILLON CONSULTING

Project 11-5681

DESIGN	DJG
CHECKED	
TODAY:	7/18/2012



CITY OF OTTAWA

SOUTH NEPEAN COLLECTOR (SNC)
SEWER PHASE 2 - STRANDHERD DRIVE TO JOCKVALE ROAD

PLAN AND PROFILE
STA. 0+000 TO 0+300

WAYNE NEWELL, P.Eng. — General Manager
JONATHAN KNOYLE, P.Eng. — Senior Engineer

NOVATECH — Engineers, Planners & Landscape Architects
Suite 200, 240 Michael Cowpland Drive, Kanata, Ontario, Canada, K2M 1P6
Telephone (613) 254-9643
Facsimile (613) 254-5867
Email: novainfo@novatech-eng.com

LICENSED PROFESSIONAL ENGINEER — M.A. BISSETT — PROVINCE OF ONTARIO

Contract No. ISD14-2033 | Dwg. No. 019
Sheet 19 of 51
Asset No.
Asset Group ISD
Des. RJD | Chk'd. ERD
Dwn. NCS | Chk'd. RJD
Utility Circ. No. | Index No.
Const. Inspector
Scale: HORIZONTAL 1:500 — VERTICAL 1:100

NOTE: The location of utilities is approximate only, the exact location should be determined by consulting the municipal authorities and utility companies concerned. The contractor shall prove the location of utilities and shall be responsible for adequate protection from damage.

REVISIONS

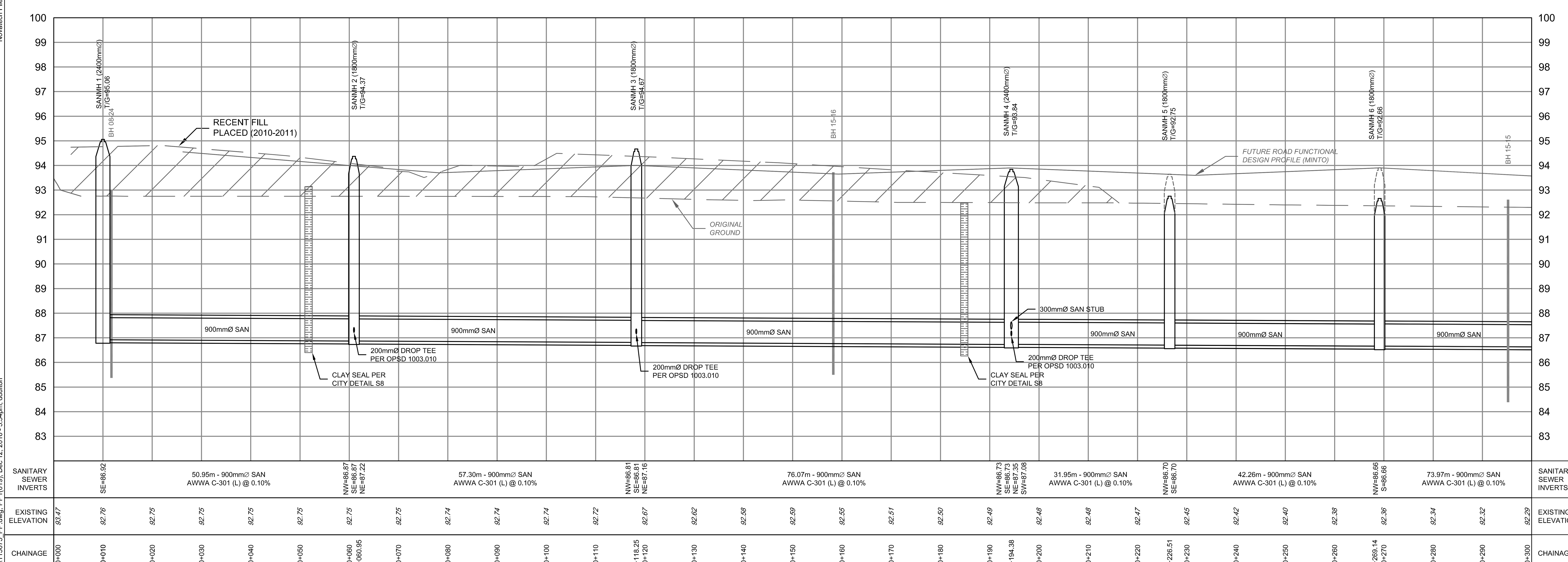
No.	Description	By	Date (dd/mm/yy)
1.	ISSUED FOR PRELIMINARY DESIGN CIRCULATION	ERD	21/12/15
2.	CHANGES TO ORIENTATION ACROSS KB SWM FACILITY	ERD	16/02/16
3.	ISSUED FOR PRELIMINARY DESIGN REPORT	ERD	02/03/16
4.	ISSUED FOR FINAL DESIGN CIRCULATION	ERD	29/04/16
5.	ISSUED FOR MOECC ECA APPLICATION	ERD	26/05/16
6.	ISSUED FOR TENDER	ERD	20/06/16
7.	ISSUED FOR CONSTRUCTION	ERD	30/08/16
8.	SEWER ALIGNMENT SHIFT ON GREENBANK	ERD	16/09/16
9.	REVISED PER MION SERVICING	ERD	08/12/16

LEGEND

EXISTING ITEMS
- WATERMAIN
- WATERMAIN VALVE
- STORM SEWER
- STORM MH (STM)
- CATCH BASIN & LEAD (CB)
- CULVERT
- STORM STRUCTURE
- SANITARY SEWER
- SANITARY MH (SAN)

PROPOSED ITEMS
- SANITARY SEWER
- SANITARY MH & LID
- CULVERT
- FUTURE STRUCTURE T/G ADJUSTMENT

Novatech File No. 115075



NOTES:

1. CONCRETE PRESSURE PIPE SHALL BE AWWA C301 (L) CL-16. FITTING SHALL BE DESIGNED TO THE SAME CRITERIA AS THE ADJACENT PIPE.
2. CONTRACTOR TO PROVIDE PIPE CLASS CALCULATIONS, AS PER AWWA C304 (DESIGN OF PRESTRESSED CONCRETE CYLINDER PIPE), BY THE PIPE MANUFACTURER, SIGNED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE PROVINCE OF ONTARIO.
3. PIPE EMBEDMENT SHALL BE AS PER CITY OF OTTAWA DETAIL S6. SAND MAY BE USED AS PIPE COVER MATERIAL ABOVE THE SPRINGLINE.
4. A CLOTH DIAPER APPROVED BY THE PIPE MANUFACTURE SHALL BE PLACED AROUND EACH EXTERIOR JOIN RECESS AND FASTENED IN PLACE WITH EITHER WIRE OR STEEL STRAPPING STITCHED INTO ITS EDGES.
5. THE JOINT SHALL BE FILLED WITH MORTAR IN ONCE CONTINUOUS OPERATION AND PATTED OR MANIPULATED TO SETTLE THE MORTAR AND EXPEL AND ENTRAPPED AIR.
6. INTERIOR JOINTS SHALL BE FILLED WITH MORTAR AFTER BACKFILLING AND FINISHED SMOOTH WITH A TROWEL. CEMENT USED SHALL MEET THE REQUIREMENTS OF TYPE HS CEMENT (HIGH-SULPHATE-RESISTANCE), OR APPROVED EQUIVALENT.
7. THE INTERIOR OF THE JOINTS SHALL BE PROTECTED FROM CORROSION WITH EPOXY AND ZINC COATING APPLIED DURING FABRICATION.
8. THE INTERIOR STRUCTURAL CONCRETE CORE SHALL BE MANUFACTURED WITH TYPE HS CEMENT (HIGH-SULPHATE-RESITANCE), OR APPROVED EQUIVALENT.
9. SEE MANHOLE DETAIL DRAWINGS ISD14-2033-36 TO ISD14-2033-45 FOR ADDITIONAL DETAILS

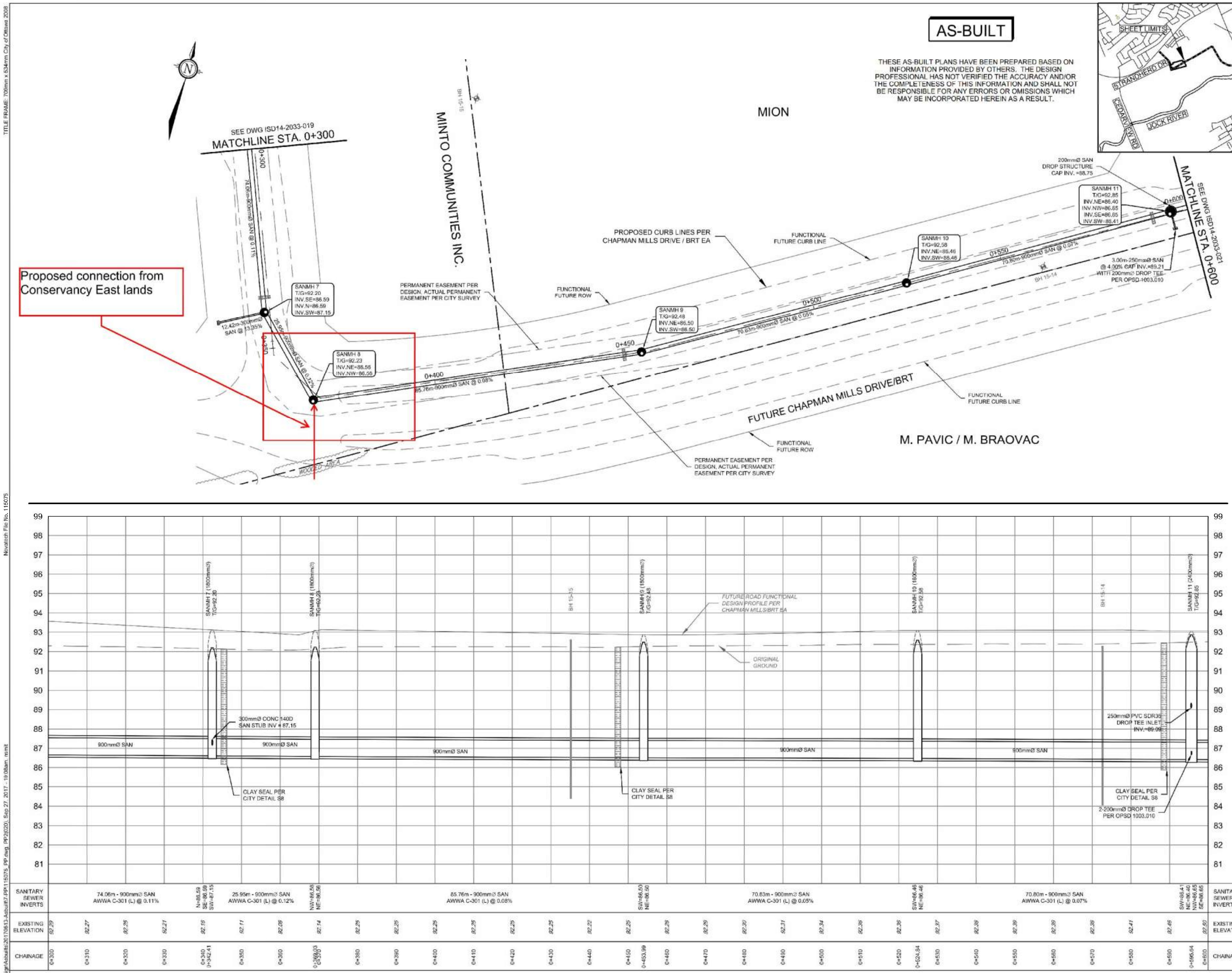
MAINTENANCE HOLE DATA

MH ID	STATION	OFFSET	STRUCTURE	COVER	T/G ELEV	LOW. INV.
1	0+010.00	1.25R	OPSD 701.013	S24/S25	95.06	86.92
2	0+060.95	1.25R	OPSD 701.012	S24/S25	94.37	86.87
3	0+118.25	1.25R	OPSD 701.012	S24/S25	94.67	86.81
4	0+194.38	0.46R	OPSD 701.013	S24/S25	93.84	86.73
5	0+226.51	1.25R	OPSD 701.012	S24/S25	92.75	86.70
6	0+269.14	1.25R	OPSD 701.012	S24/S25	92.66	86.66

SANITARY SEWER PIPE DATA

CONNECTED STRUCTURES & INVERTS	DIA (mm)	LENGTH (m)	MATERIAL
SANMH 1 = 86.92 SANMH 2 = 86.87	900	50.95	AWWA C-301 (L)
SANMH 2 = 86.87 SANMH 3 = 86.81	900	57.30	AWWA C-301 (L)
SANMH 3 = 86.81 SANMH 4 = 86.73	900	76.07	AWWA C-301 (L)
SANMH 5 = 86.70 SANMH 4 = 86.73	900	31.95	AWWA C-301 (L)
SANMH 5 = 86.70 SANMH 6 = 86.66	900	42.26	AWWA C-301 (L)
SANMH 6 = 86.66 SANMH 7 = 86.59	900	73.97	AWWA C-301 (L)

M:\2015\115075\CAD\Design\115075_PP.dwg, PP11(019), Dec 12, 2016 - 5:54pm, ddufton



CITY OF OTTAWA

SOUTH NEPEAN COLLECTOR (SNC) SEWER PHASE 2 - STRANDHERD DRIVE TO JOCKVALE ROAD

PLAN AND PROFILE STA. 0+300 TO 0+600

WAYNE NEWELL, P.Eng. *General Manager*
JONATHAN KNOYLE, P.Eng. *Senior Engineer*

NOVATECH
Engineers, Planners & Landscape Architects
Suite 200, 240 Michael Cowpland Drive Kanata, Ontario, Canada, K2M 1P6
Telephone (613) 254-9643
Facsimile (613) 254-5867
Email: novainfo@novatech-eng.com

Ottawa

Contract No. ISD14-2033	Dwg. No. 020
Sheet 20 of 51	
Asset No.	
Asset Group ISD	
Des. RJD	Chk'd. ERD
Dwn. NCS	Chk'd. RJD
Utility Circ. No.	Index No.
Const. Inspector	
Scale: HORIZONTAL 1:500, VERTICAL 1:100	

NOTE: The location of utilities is approximate only, the exact location should be determined by consulting the municipal authorities and utility companies concerned. The contractor shall prove the location of utilities and shall be responsible for adequate protection from damage.

REVISIONS

No.	Description	By	Date (dd/mm/yy)
1.	ISSUED FOR PRELIMINARY DESIGN CIRCULATION	ERD	21/12/15
2.	CHANGES TO ORIENTATION ACROSS KB SWM FACILITY	ERD	16/02/16
3.	ISSUED FOR PRELIMINARY DESIGN REPORT	ERD	02/03/16
4.	ISSUED FOR FINAL DESIGN CIRCULATION	ERD	29/04/16
5.	ISSUED FOR MOECC ECA APPLICATION	ERD	26/05/16
6.	ISSUED FOR TENDER	ERD	20/06/16
7.	ISSUED FOR CONSTRUCTION	ERD	30/08/16
8.	SEWER ALIGNMENT SHIFT ON GREENBANK	ERD	16/09/16
9.	REVISED PER MION SERVICING	ERD	08/12/16
10.	MINTO LANDS MANHOLE UPDATE	ERD	24/04/17
11.	ISSUED FOR AS-BUILT	ERD	28/09/17

LEGEND

EXISTING ITEMS
WATERMAIN
WATERMAIN VALVE
STORM SEWER
STORM MH — STM
CATCH BASIN & LEAD — CB
CULVERT
STORM STRUCTURE
SANITARY SEWER
SANITARY MH — SAN

PROPOSED ITEMS
SANITARY SEWER
SANITARY MH & LID
CULVERT
FUTURE STRUCTURE T/G ADJUSTMENT

NOTES:

1. CONCRETE PRESSURE PIPE SHALL BE AWWA C301 (L) CL-16. FITTING SHALL BE DESIGNED TO THE SAME CRITERIA AS THE ADJACENT PIPE.
2. CONTRACTOR TO PROVIDE PIPE CLASS CALCULATIONS, AS PER AWWA C304 (DESIGN OF PRESTRESSED CONCRETE CYLINDER PIPE), BY THE PIPE MANUFACTURER, SIGNED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE PROVINCE OF ONTARIO.
3. PIPE EMBEDMENT SHALL BE AS PER CITY OF OTTAWA DETAIL S6. SAND MAY BE USED AS PIPE COVER MATERIAL ABOVE THE SPRINGLINE.
4. A CLOTH DIAPER APPROVED BY THE PIPE MANUFACTURE SHALL BE PLACED AROUND EACH EXTERIOR JOIN RECESS AND FASTENED IN PLACE WITH EITHER WIRE OR STEEL STRAPPING STITCHED INTO ITS EDGES.
5. THE JOINT SHALL BE FILLED WITH MORTAR IN ONCE CONTINUOUS OPERATION AND PATTED OR MANIPULATED TO SETTLE THE MORTAR AND EXPEL AND ENTRAPPED AIR.
6. INTERIOR JOINTS SHALL BE FILLED WITH MORTAR AFTER BACKFILLING AND FINISHED SMOOTH WITH A TROWEL. CEMENT USED SHALL MEET THE REQUIREMENTS OF TYPE HS CEMENT (HIGH-SULPHATE-RESISTANCE), OR APPROVED EQUIVALENT.
7. THE INTERIOR OF THE JOINTS SHALL BE PROTECTED FROM CORROSION WITH EPOXY AND ZINC COATING APPLIED DURING FABRICATION.
8. THE INTERIOR STRUCTURAL CONCRETE CORE SHALL BE MANUFACTURED WITH TYPE HS CEMENT (HIGH-SULPHATE-RESITANCE), OR APPROVED EQUIVALENT.
9. SEE MANHOLE DETAIL DRAWINGS ISD14-2033-36 TO ISD14-2033-45 FOR ADDITIONAL DETAILS

MAINTENANCE HOLE DATA

MH ID	STATION	OFFSET	STRUCTURE	COVER	T/G ELEV	LOW. INV.
7	0+342.41	1.41R	OPSD 701.012	S24/S25	92.20	86.59
8	0+369.03	1.50R	OPSD 701.012	S24/S25	92.23	86.56
9	0+453.99	0.07L	OPSD 701.012	S24/S25	92.48	86.50
10	0+524.84	0.04L	OPSD 701.012	S24/S25	92.58	86.46
11	0+595.64	0.41L	OPSD 701.013	S24/S25	92.85	86.40

SANITARY SEWER PIPE DATA

CONNECTED STRUCTURES & INVERTS	DIA (mm)	LENGTH (m)	MATERIAL
SANMH 6 = 86.68 SANMH 7 = 86.59	900	74.06	AWWA C-301 (L)
SANMH 7 = 86.59 SANMH 8 = 86.56	900	25.95	AWWA C-301 (L)
SANMH 8 = 86.56 SANMH 9 = 86.50	900	85.76	AWWA C-301 (L)
SANMH 10 = 86.46 SANMH 9 = 86.50	900	70.83	AWWA C-301 (L)
SANMH 10 = 86.46 SANMH 11 = 86.41	900	70.80	AWWA C-301 (L)
SANMH 11 = 86.40 SANMH 12 = 86.32	900	78.15	AWWA C-301 (L)

SANITARY SEWER CALCULATION SHEET

Manning's n=0.013

Ottawa

LOCATION			RESIDENTIAL AREA AND POPULATION							COMM		INDUST		PARK		C+I+I	INFILTRATION				PIPE						
STREET	FROM M.H.	TO M.H.	AREA (ha)	UNITS	POP.	CUMULATIVE AREA (ha)	CUMULATIVE POP.	PEAK FACT.	PEAK FLOW (l/s)	AREA (ha)	ACCU. AREA (ha)	AREA (ha)	ACCU. AREA (ha)	AREA (ha)	ACCU. AREA (ha)	PEAK FLOW (l/s)	TOTAL AREA (ha)	ACCU. AREA (ha)	INFILT. FLOW (l/s)	TOTAL FLOW (l/s)	DIST (m)	DIA (mm)	SLOPE (%)	CAP. (FULL) (l/s)	RATIO Q act/Q cap	VEL. (FULL) (m/s)	VEL. (ACT.) (m/s)
Street30																											
	105A	106A	0.19		20	0.19	20	3.7	0.24		0.00		0.00		0.00	0.00	0.19	0.19	0.06	0.30	23.0	200	0.65	26.44	0.01	0.84	0.28
	106A	107A	0.11		12	0.30	32	3.7	0.38		0.00		0.00		0.00	0.00	0.11	0.30	0.10	0.48	37.5	250	0.25	29.73	0.02	0.61	0.22
To Street 17, Pipe 107A - 108A						0.30	32				0.00		0.00		0.00			0.30									
Street 26																											
Contribution From Street 3, Pipe 9400A - 95A						0.01	2				0.00		0.00		0.00		0.01	0.01									
	95A	96A	0.16		17	0.17	19	3.7	0.23		0.00		0.00		0.00	0.00	0.16	0.17	0.06	0.28	60.5	200	0.70	27.44	0.01	0.87	0.28
	96A	98A	0.15		16	0.32	35	3.7	0.42		0.00		0.00		0.00	0.00	0.15	0.32	0.11	0.52	57.5	250	0.25	29.73	0.02	0.61	0.23
To Street 22, Pipe 98A - 102A						0.32	35				0.00		0.00		0.00			0.32									
Street 24																											
Contribution From Street 3, Pipe 9500A - 73A						0.18	19				0.00		0.00		0.00		0.18	0.18									
	73A	97A	0.40		42	0.58	61	3.6	0.72		0.00		0.00		0.00	0.00	0.40	0.58	0.19	0.91	105.5	300	0.20	43.25	0.02	0.61	0.25
To Street 22, Pipe 97A - 98A						0.58	61				0.00		0.00		0.00			0.58									
Street 27																											
	96A	99A	0.50		52	0.50	52	3.6	0.61		0.00		0.00		0.00	0.00	0.50	0.50	0.17	0.78	99.0	200	0.85	30.24	0.03	0.96	0.41
To Street 22, Pipe 99A - 100A						0.50	52				0.00		0.00		0.00			0.50									
Street 28																											
Contribution From Street 14, Pipe 86A - 91A						1.33	143				0.00		0.00		0.57		1.90	1.90									
Contribution From Street 14, Pipe 90A - 91A						1.09	116				0.00		0.00		0.00		1.09	2.99									
	91A	94A	0.05		6	2.47	265	3.5	2.99		0.00		0.00		0.57	0.06	0.05	3.04	1.00	4.05	62.0	375	0.15	67.91	0.06	0.61	0.34
To Street 3, Pipe 94A - 93A						2.47	265				0.00		0.00		0.57			3.04									
Street 22																											
	75A	97A	0.12		13	0.12	13	3.7	0.16		0.00		0.00		0.00	0.00	0.12	0.12	0.04	0.20	45.0	200	0.65	26.44	0.01	0.84	0.24
Contribution From Street 24, Pipe 73A - 97A						0.58	61				0.00		0.00		0.00		0.58	0.70									
	97A	98A	0.18		19	0.88	93	3.6	1.09		0.00		0.00		0.00	0.00	0.18	0.88	0.29	1.38	45.0	300	0.20	43.25	0.03	0.61	0.28
Contribution From Street 26, Pipe 96A - 98A						0.32	35				0.00		0.00		0.00		0.32	1.20									
	98A	102A	0.46		48	1.66	176	3.5	2.02		0.00		0.00		0.00	0.00	0.46	1.66	0.55	2.56	83.5	300	0.55	71.72	0.04	1.01	0.47
To Street 29, Pipe 102A - 103A						1.66	176				0.00		0.00		0.00			1.66									
Contribution From Street 3, Pipe 92A - 93A						0.12	13				0.00		0.00		0.00		0.12	0.12									
Contribution From Street 3, Pipe 94A - 93A						2.97	317				0.00		0.00		0.57		3.54	3.66									
	93A	99A	0.19		20	3.28	350	3.4	3.90		0.00		0.00		0.57	0.06	0.19	3.85	1.27	5.23	60.5	375	0.15	67.91	0.08	0.61	0.36
Contribution From Street 27, Pipe 9600A - 99A						0.50	52				0.00		0.00		0.00		0.50	4.35									
	99A	100A	0.20		21	3.98	423	3.4	4.67		0.00		0.00		0.57	0.06	0.20	4.55	1.50	6.24	50.5	375	0.15	67.91	0.09	0.61	0.38
	100A	101A	0.13		14	4.11	437	3.4	4.82		0.00		0.00		0.57	0.06	0.13	4.68	1.54	6.42	11.0	375	0.15	67.91	0.09	0.61	0.38
	101A	102A	0.04		5	4.15	442	3.4	4.87		0.00		0.00		0.57	0.06	0.04	4.72	1.56	6.49	10.0	375	0.15	67.91	0.10	0.61	0.38
To Street 29, Pipe 102A - 103A						4.15	442				0.00		0.00		0.57			4.72									
Street 29																											
Contribution From Street 22, Pipe 101A - 102A						4.15	442				0.00		0.00		0.57		4.72	4.72									
Contribution From Street 22, Pipe 98A - 102A						1.66	176				0.00		0.00		0.00		1.66	6.38									
	102A	103A	0.05		6	5.86	624	3.3	6.75		0.00		0.00		0.57	0.06	0.05	6.43	2.12	8.93	62.0	375	0.15	67.91	0.13	0.61	0.42
To Street 17, Pipe 103A - 107A						5.86	624				0.00		0.00		0.57			6.43									

DESIGN PARAMETERS

Park Flow =	9300	L/ha/da	0.10764	l/s/Ha	
Average Daily Flow =	280	l/p/day			Industrial Peak Factor = as per MOE Graph
Comm/Inst Flow =	28000	L/ha/da	0.3241	l/s/Ha	Extraneous Flow = 0.330 L/s/ha
Industrial Flow =	35000	L/ha/da	0.40509	l/s/Ha	Minimum Velocity = 0.600 m/s
Max Res. Peak Factor =	4.00				Manning's n = (Conc) 0.013 (Pvc) 0.013
Commercial/Inst./Park Peak Factor =	1.00				Townhouse coeff= 2.7
Institutional =	0.32	l/s/Ha			Single house coeff= 3.4

Designed: A.K.

Checked: W.L.

Dwg. Reference: Sanitary Drainage Plan, Dwgs. No.

PROJECT: **BARRHAVEN CONSERVANCY WEST**

LOCATION: **City of Ottawa**

File Ref:

Date: Oct 2021

Sheet No. 1 of 6

LICENSED PROFESSIONAL ENGINEER W. LIU 100167932 21-10-15 PROVINCE OF ONTARIO

1226_SAN_Designsheet.xlsx

LICENSED PROFESSIONAL ENGINEER
W. LIU
100167932
21-10-15
PROVINCE OF ONTARIO

SANITARY SEWER CALCULATION SHEET

Manning's n=0.013

LOCATION			RESIDENTIAL AREA AND POPULATION							COMM		INSTIT		PARK		C+I+I	INFILTRATION				PIPE						
STREET	FROM M.H.	TO M.H.	AREA (ha)	UNITS	POP.	CUMULATIVE AREA (ha)	CUMULATIVE POP.	PEAK FACT.	PEAK FLOW (l/s)	AREA (ha)	ACCU. AREA (ha)	AREA (ha)	ACCU. AREA (ha)	AREA (ha)	ACCU. AREA (ha)	PEAK FLOW (l/s)	TOTAL AREA (ha)	ACCU. AREA (ha)	INFILT. FLOW (l/s)	TOTAL FLOW (l/s)	DIST (m)	DIA (mm)	SLOPE (%)	CAP. (FULL) (l/s)	RATIO Q act/Q cap	VEL. (FULL) (m/s)	VEL. (ACT.) (m/s)
Street 20																											
Contribution From Street 3, Pipe 6300A - 74A						0.16	17				0.00		0.00		0.00		0.16	0.16									
Contribution From Street 3, Pipe 7300A - 74A						0.18	19				0.00		0.00		0.00		0.18	0.34									
	74A	75A	0.37		39	0.71	75	3.6	0.88		0.00		0.00		0.00	0.00	0.37	0.71	0.23	1.11	94.5	300	0.20	43.25	0.03	0.61	0.26
	75A	76A	0.16		17	0.87	92	3.6	1.07		0.00		0.00		0.00	0.00	0.16	0.87	0.29	1.36	63.5	300	0.20	43.25	0.03	0.61	0.28
To Street 17, Pipe 76A - 77A						0.87	92				0.00		0.00		0.00			0.87									
Street 2																											
	65A	25A	0.55		58	0.55	58	3.6	0.68		0.00		0.00		0.00	0.00	0.55	0.55	0.18	0.87	101.5	200	0.65	26.44	0.03	0.84	0.38
To Street 4, Pipe 25A - 27A						0.55	58				0.00		0.00		0.00			0.55									
	1A	2A	0.40		42	0.40	42	3.7	0.50		0.00		0.00		0.00	0.00	0.40	0.40	0.13	0.63	66.5	200	0.65	26.44	0.02	0.84	0.35
	2A	3A	0.10		11	0.50	53	3.6	0.63		0.00		0.00		0.00	0.00	0.10	0.50	0.17	0.79	10.0	200	0.35	19.40	0.04	0.62	0.30
	3A	4A	0.17		18	0.67	71	3.6	0.83		0.00		0.00		0.00	0.00	0.17	0.67	0.22	1.06	44.0	250	0.25	29.73	0.04	0.61	0.28
	4A	5A	0.18		19	0.85	90	3.6	1.05		0.00		0.00		0.00	0.00	0.18	0.85	0.28	1.33	13.5	300	0.20	43.25	0.03	0.61	0.28
	5A	6A	0.40		42	1.25	132	3.6	1.53		0.00		0.00		0.00	0.00	0.40	1.25	0.41	1.94	68.5	375	0.15	67.91	0.03	0.61	0.27
	6A	7A	0.35		37	1.60	169	3.5	1.94		0.00		0.00		0.00	0.00	0.35	1.60	0.53	2.47	62.0	375	0.15	67.91	0.04	0.61	0.29
	7A	8A	0.33		35	1.93	204	3.5	2.32		0.00		0.00		0.00	0.00	0.33	1.93	0.64	2.96	61.5	375	0.15	67.91	0.04	0.61	0.30
	8A	9A	0.43		45	2.36	249	3.5	2.82		0.00		0.00		0.00	0.00	0.43	2.36	0.78	3.59	73.5	375	0.15	67.91	0.05	0.61	0.32
	9A	10A	0.11		12	2.47	261	3.5	2.95		0.00		0.00		0.00	0.00	0.11	2.47	0.82	3.76	14.5	375	0.15	67.91	0.06	0.61	0.32
	10A	17A	0.21		22	2.68	283	3.5	3.18		0.00		0.00		0.00	0.00	0.21	2.68	0.88	4.07	53.5	375	0.15	67.91	0.06	0.61	0.34
To Street 3, Pipe 17A - 23A						2.68	283				0.00		0.00		0.00			2.68									
	1A	18A	0.39		41	0.39	41	3.7	0.49		0.00		0.00		0.00	0.00	0.39	0.39	0.13	0.62	66.0	200	0.65	26.44	0.02	0.84	0.35
	18A	19A	0.36		38	0.75	79	3.6	0.93		0.00		0.00		0.00	0.00	0.36	0.75	0.25	1.17	61.5	250	0.25	29.73	0.04	0.61	0.29
	19A	20A	0.48		50	1.23	129	3.6	1.49		0.00		0.00		0.00	0.00	0.48	1.23	0.41	1.90	83.0	300	0.20	43.25	0.04	0.61	0.30
	20A	21A	0.24		25	1.47	154	3.5	1.77		0.00		0.00		0.00	0.00	0.24	1.47	0.49	2.26	39.5	300	0.20	43.25	0.05	0.61	0.32
	21A	22A	0.24		25	1.71	179	3.5	2.05		0.00		0.00		0.00	0.00	0.24	1.71	0.56	2.61	40.5	300	0.35	57.21	0.05	0.81	0.41
	22A	23A	0.31		33	2.02	212	3.5	2.41		0.00		0.00		0.00	0.00	0.31	2.02	0.67	3.08	57.0	300	0.80	86.49	0.04	1.22	0.56
Contribution From Street 3, Pipe 17A - 23A						5.02	529				0.00		0.00		0.00		5.02	7.04									
	23A	24A	0.20		21	7.24	762	3.3	8.15		0.00		0.00		0.00	0.00	0.20	7.24	2.39	10.53	52.0	375	0.15	67.91	0.16	0.61	0.45
	24A	25A	0.13		14	7.37	776	3.3	8.29		0.00		0.00		0.00	0.00	0.13	7.37	2.43	10.72	13.5	375	0.15	67.91	0.16	0.61	0.45
To Street 4, Pipe 25A - 27A						7.37	776				0.00		0.00		0.00			7.37									
Street 4																											
Contribution From Street 2, Pipe 24A - 25A						7.37	776				0.00		0.00		0.00		7.37	7.37									
Contribution From Street 2, Pipe 6500A - 25A						0.55	58				0.00		0.00		0.00		0.55	7.92									
	25A	27A	0.03		4	7.95	838	3.3	8.90		0.00		0.00		0.00	0.00	0.03	7.95	2.62	11.53	67.5	375	0.15	67.91	0.17	0.61	0.45
To Street 5, Pipe 27A - 28A						7.95	838				0.00		0.00		0.00			7.95									
Street 5																											
	67A	29A	0.48		50	0.48	50	3.7	0.59		0.00		0.00		0.00	0.00	0.48	0.48	0.16	0.75	90.0	200	0.65	26.44	0.03	0.84	0.37
To Street 8, Pipe 29A - 31A						0.48	50				0.00		0.00		0.00			0.48									
	66A	26A	0.49		51	0.49	51	3.7	0.60		0.00		0.00		0.00	0.00	0.49	0.49	0.16	0.77	89.0	200	0.65	26.44	0.03	0.84	0.37
	26A	27A	0.04		5	0.53	56	3.6	0.66		0.00		0.00		0.00	0.00	0.04	0.53	0.17	0.84	15.0	200	0.35	19.40	0.04	0.62	0.31
Contribution From Street 4, Pipe 25A - 27A						7.95	838				0.00		0.00		0.00		7.95	8.48									
	27A	28A	0.29		31	8.77	925	3.3	9.76		0.00		0.00		0.00	0.00	0.29	8.77	2.89	12.66	44.0	375	0.15	67.91	0.19	0.61	0.47

DESIGN PARAMETERS

Park Flow =	9300	L/ha/da	0.10764	l/s/Ha		
Average Daily Flow =	280	l/p/day			Industrial Peak Factor = as per MOE Graph	
Comm/Inst Flow =	28000	L/ha/da	0.3241	l/s/Ha	Extraneous Flow =	0.330 L/s/ha
Industrial Flow =	35000	L/ha/da	0.40509	l/s/Ha	Minimum Velocity =	0.600 m/s
Max Res. Peak Factor =	4.00				Manning's n = (Conc)	0.013 (Pvc) 0.013
Commercial/Inst./Park Peak Factor =	1.00				Townhouse coeff=	2.7
Institutional =	0.32	l/s/Ha			Single house coeff=	3.4

Designed: A.K.

Checked: W.L.

Dwg. Reference: Sanitary Drainage Plan, Dwgs. No.

PROJECT: **BARRHAVEN CONSERVANCY WEST**

LOCATION: **City of Ottawa**

File Ref:

Date: Oct 2021

Sheet No. 2 of 6

1226_SAN Designsheet.xlsx

LICENSED PROFESSIONAL ENGINEER
W. LIU
100167932
21-10-15
PROVINCE OF ONTARIO

SANITARY SEWER CALCULATION SHEET

Manning's n=0.013

Ottawa

LOCATION			RESIDENTIAL AREA AND POPULATION							COMM		INSTIT		PARK		C+I+I	INFILTRATION				PIPE						
STREET	FROM M.H.	TO M.H.	AREA (ha)	UNITS	POP.	CUMULATIVE AREA (ha)	CUMULATIVE POP.	PEAK FACT.	PEAK FLOW (l/s)	AREA (ha)	ACCU. AREA (ha)	AREA (ha)	ACCU. AREA (ha)	AREA (ha)	ACCU. AREA (ha)	PEAK FLOW (l/s)	TOTAL AREA (ha)	ACCU. AREA (ha)	INFILT. FLOW (l/s)	TOTAL FLOW (l/s)	DIST (m)	DIA (mm)	SLOPE (%)	CAP. (FULL) (l/s)	RATIO Q act/Q cap	VEL. (FULL) (m/s)	VEL. (ACT.) (m/s)
	28A	29A	0.11		12	8.88	937	3.3	9.88		0.00		0.00		0.00	0.00	0.11	8.88	2.93	12.81	10.5	375	0.15	67.91	0.19	0.61	0.47
To Street 8, Pipe 29A - 31A						8.88	937				0.00		0.00		0.00			8.88									
Street 8																											
Contribution From Street 5, Pipe 28A - 29A						8.88	937				0.00		0.00		0.00		8.88	8.88									
Contribution From Street 5, Pipe 6700A - 29A						0.48	50				0.00		0.00		0.00		0.48	9.36									
	29A	31A	0.03		4	9.39	991	3.2	10.41		0.00		0.00		0.00	0.00	0.03	9.39	3.10	13.51	66.0	375	0.15	67.91	0.20	0.61	0.48
To Street 10, Pipe 31A - 32A						9.39	991				0.00		0.00		0.00			9.39									
Street 10																											
	69A	33A	0.41		43	0.41	43	3.7	0.51		0.00		0.00		0.00	0.00	0.41	0.41	0.14	0.65	76.5	200	1.05	33.61	0.02	1.07	0.42
To Street 13, Pipe 33A - 71A						0.41	43				0.00		0.00		0.00			0.41									
	68A	30A	0.41		43	0.41	43	3.7	0.51		0.00		0.00		0.00	0.00	0.41	0.41	0.14	0.65	75.0	200	0.65	26.44	0.02	0.84	0.35
	30A	31A	0.05		6	0.46	49	3.7	0.58		0.00		0.00		0.00	0.00	0.05	0.46	0.15	0.73	15.0	200	0.35	19.40	0.04	0.62	0.29
Contribution From Street 8, Pipe 29A - 31A						9.39	991				0.00		0.00		0.00		9.39	9.85									
	31A	32A	0.27		29	10.12	1069	3.2	11.17		0.00		0.00		0.00	0.00	0.27	10.12	3.34	14.51	44.0	375	0.15	67.91	0.21	0.61	0.49
	32A	33A	0.13		14	10.25	1083	3.2	11.31		0.00		0.00		0.00	0.00	0.13	10.25	3.38	14.69	13.0	375	0.15	67.91	0.22	0.61	0.49
To Street 13, Pipe 33A - 71A						10.25	1083				0.00		0.00		0.00			10.25									
Street 13																											
Contribution From Street 10, Pipe 32A - 33A						10.25	1083				0.00		0.00		0.00		10.25	10.25									
Contribution From Street 10, Pipe 6900A - 33A						0.41	43				0.00		0.00		0.00		0.41	10.66									
	33A	71A	0.03		4	10.69	1130	3.2	11.76		0.00		0.00		0.00	0.00	0.03	10.69	3.53	15.29	63.0	375	0.15	67.91	0.23	0.61	0.49
To Street 17, Pipe 71A - 72A						10.69	1130				0.00		0.00		0.00			10.69									
Street 6																											
	65A	16A	0.20		21	0.20	21	3.7	0.25		0.00		0.00		0.00	0.00	0.20	0.20	0.07	0.32	59.5	200	0.65	26.44	0.01	0.84	0.28
To Street 3, Pipe 16A - 17A						0.20	21				0.00		0.00		0.00			0.20									
	65A	66A	0.22		23	0.22	23	3.7	0.28		0.00		0.00		0.00	0.00	0.22	0.22	0.07	0.35	58.5	200	0.65	26.44	0.01	0.84	0.29
	66A	67A	0.22		23	0.44	46	3.7	0.55		0.00		0.00		0.00	0.00	0.22	0.44	0.15	0.69	58.5	200	2.60	52.89	0.01	1.68	0.59
	67A	68A	0.22		23	0.66	69	3.6	0.81		0.00		0.00		0.00	0.00	0.22	0.66	0.22	1.03	58.5	250	0.25	29.73	0.03	0.61	0.28
	68A	69A	0.24		25	0.90	94	3.6	1.10		0.00		0.00		0.00	0.00	0.24	0.90	0.30	1.39	58.5	250	0.25	29.73	0.05	0.61	0.31
	69A	70A	0.19		20	1.09	114	3.6	1.32		0.00		0.00		0.00	0.00	0.19	1.09	0.36	1.68	62.5	300	0.20	43.25	0.04	0.61	0.29
To Street 17, Pipe 70A - 71A						1.09	114				0.00		0.00		0.00			1.09									
Street 3																											
	63A	74A	0.16		17	0.16	17	3.7	0.20		0.00		0.00		0.00	0.00	0.16	0.16	0.05	0.26	48.0	200	0.85	30.24	0.01	0.96	0.29
To Street 20, Pipe 74A - 75A						0.16	17				0.00		0.00		0.00			0.16									
	73A	74A	0.18		19	0.18	19	3.7	0.23		0.00		0.00		0.00	0.00	0.18	0.18	0.06	0.29	43.5	200	0.65	26.44	0.01	0.84	0.27
To Street 20, Pipe 74A - 75A						0.18	19				0.00		0.00		0.00			0.18									
	92A	93A	0.12		13	0.12	13	3.7	0.16		0.00		0.00		0.00	0.00	0.12	0.12	0.04	0.20	29.5	200	1.45	39.49	0.00	1.26	0.32
To Street 22, Pipe 93A - 99A						0.12	13				0.00		0.00		0.00			0.12									

DESIGN PARAMETERS

Park Flow =	9300	L/ha/da	0.10764	l/s/Ha				
Average Daily Flow =	280	l/p/day			Industrial Peak Factor = as per MOE Graph			
Comm/Inst Flow =	28000	L/ha/da	0.3241	l/s/Ha	Extraneous Flow =		0.330	L/s/ha
Industrial Flow =	35000	L/ha/da	0.40509	l/s/Ha	Minimum Velocity =		0.600	m/s
Max Res. Peak Factor =	4.00				Manning's n =	(Conc)	0.013	(Pvc) 0.013
Commercial/Inst./Park Peak Factor =	1.00				Townhouse coeff=		2.7	
Institutional =	0.32	l/s/Ha			Single house coeff=		3.4	

Designed: A.K.

Checked: W.L.

Dwg. Reference: Sanitary Drainage Plan, Dwgs. No.

PROJECT: **BARRHAVEN CONSERVANCY WEST**

LOCATION: **City of Ottawa**

File Ref:

Date: **Oct 2021**

Sheet No. 3 of 6

1226_SAN_Designsheet.xlsx

LICENSED PROFESSIONAL ENGINEER
W. LIU
100167932
21-10-15
PROVINCE OF ONTARIO

SANITARY SEWER CALCULATION SHEET

Ottawa

Manning's n=0.013

LOCATION			RESIDENTIAL AREA AND POPULATION							COMM		INSTIT		PARK		C+I+I	INFILTRATION				PIPE						
STREET	FROM M.H.	TO M.H.	AREA (ha)	UNITS	POP.	CUMULATIVE AREA (ha)	CUMULATIVE POP.	PEAK FACT.	PEAK FLOW (l/s)	AREA (ha)	ACCU. AREA (ha)	AREA (ha)	ACCU. AREA (ha)	AREA (ha)	ACCU. AREA (ha)	PEAK FLOW (l/s)	TOTAL AREA (ha)	ACCU. AREA (ha)	INFILT. FLOW (l/s)	TOTAL FLOW (l/s)	DIST (m)	DIA (mm)	SLOPE (%)	CAP. (FULL) (l/s)	RATIO Q act/Q cap	VEL. (FULL) (m/s)	VEL. (ACT.) (m/s)
	94A	95A	0.01		2	0.01	2	3.8	0.02		0.00		0.00		0.00	0.00	0.01	0.01	0.00	0.03	7.5	200	0.65	26.44	0.00	0.84	0.12
To Street 26, Pipe 95A - 96A						0.01	2				0.00		0.00		0.00			0.01									
	95A	73A	0.18		19	0.18	19	3.7	0.23		0.00		0.00		0.00	0.00	0.18	0.18	0.06	0.29	43.5	200	0.65	26.44	0.01	0.84	0.27
To Street 24, Pipe 73A - 97A						0.18	19				0.00		0.00		0.00			0.18									
	11A	34A	0.27		29	0.27	29	3.7	0.35		0.00		0.00		0.00	0.00	0.27	0.27	0.09	0.44	69.5	200	0.65	26.44	0.02	0.84	0.30
	34A	35A	0.29		31	0.56	60	3.6	0.71		0.00		0.00		0.00	0.00	0.29	0.56	0.18	0.89	74.5	250	0.25	29.73	0.03	0.61	0.27
			13.70		0	14.26	60				0.00		0.00		0.00		13.70	14.26		0.00058							
	35A	36A	0.21		22	14.47	82	3.6	0.96		0.00		0.00		0.00	0.00	0.21	14.47	4.78	5.74	13.5	300	0.20	43.25	0.13	0.61	0.42
	36A	37A	0.36		38	14.83	120	3.6	1.39		0.00		0.00		0.00	0.00	0.36	14.83	4.89	6.29	89.0	375	0.15	67.91	0.09	0.61	0.38
	37A	38A	0.34		36	15.17	156	3.5	1.79		0.00		0.00		0.00	0.00	0.34	15.17	5.01	6.80	89.0	375	0.20	78.41	0.09	0.71	0.43
	38A	39A	0.09		10	15.26	166	3.5	1.91		0.00		0.00		0.00	0.00	0.09	15.26	5.04	6.94	52.0	375	0.20	78.41	0.09	0.71	0.44
	39A	40A	0.08		9	15.34	175	3.5	2.00		0.00		0.00	2.90	2.90	0.31	2.98	18.24	6.02	8.34	13.5	375	0.15	67.91	0.12	0.61	0.42
	40A	41A	0.63		66	15.97	241	3.5	2.73		0.00		0.00		2.90	0.31	0.63	18.87	6.23	9.27	101.5	375	0.15	67.91	0.14	0.61	0.43
	41A	63A	0.51		54	16.48	295	3.5	3.31		0.00		0.00		2.90	0.31	0.51	19.38	6.40	10.02	91.5	375	0.15	67.91	0.15	0.61	0.44
To Street 17, Pipe 63A - 64A						16.48	295				0.00		0.00		2.90			19.38		0.00							
	11A	12A	0.11		12	0.11	12	3.7	0.14		0.00		0.00		0.00	0.00	0.11	0.11	0.04	0.18	10.5	200	0.65	26.44	0.01	0.84	0.23
	12A	13A	0.45		47	0.56	59	3.6	0.70		0.00		0.00		0.00	0.00	0.45	0.56	0.18	0.88	74.5	250	0.25	29.73	0.03	0.61	0.27
	13A	14A	0.45		47	1.01	106	3.6	1.23		0.00		0.00		0.00	0.00	0.45	1.01	0.33	1.57	79.5	250	0.25	29.73	0.05	0.61	0.32
	14A	15A	0.40		42	1.41	148	3.6	1.70		0.00		0.00		0.00	0.00	0.40	1.41	0.47	2.17	54.0	250	0.25	29.73	0.07	0.61	0.35
	15A	16A	0.25		26	1.66	174	3.5	1.99		0.00		0.00		0.00	0.00	0.25	1.66	0.55	2.54	54.0	300	0.20	43.25	0.06	0.61	0.33
Contribution From Street 6, Pipe 65A - 16A						0.20	21				0.00		0.00		0.00		0.20	1.86									
	16A	17A	0.28		30	2.14	225	3.5	2.55		0.00		0.00		0.00	0.00	0.28	2.14	0.71	3.26	53.5	300	0.90	91.74	0.04	1.30	0.60
Contribution From Street 2, Pipe 10A - 17A						2.68	283				0.00		0.00		0.00		2.68	4.82									
	17A	23A	0.20		21	5.02	529	3.4	5.78		0.00		0.00		0.00	0.00	0.20	5.02	1.66	7.43	59.0	375	0.15	67.91	0.11	0.61	0.40
To Street 2, Pipe 23A - 24A						5.02	529				0.00		0.00		0.00			5.02									
Contribution From Street 28, Pipe 91A - 94A						2.47	265				0.00		0.00		0.57		3.04	3.04									
	94A	93A	0.50		52	2.97	317	3.5	3.55		0.00		0.00		0.57	0.06	0.50	3.54	1.17	4.78	89.0	375	0.15	67.91	0.07	0.61	0.35
To Street 22, Pipe 93A - 99A						2.97	317				0.00		0.00		0.57			3.54									
Street 21																											
	45A	59A	0.35		37	0.35	37	3.7	0.44		0.00		0.00		0.00	0.00	0.35	0.35	0.12	0.56	89.5	200	0.65	26.44	0.02	0.84	0.34
	59A	60A	0.36		38	0.71	75	3.6	0.88		0.00		0.00		0.00	0.00	0.36	0.71	0.23	1.11	89.5	250	0.25	29.73	0.04	0.61	0.29
			0.06		7	0.77	82				0.00		0.00		0.00		0.06	0.77									
	60A	61A	0.46		48	1.23	130	3.6	1.50		0.00		0.00		0.00	0.00	0.46	1.23	0.41	1.91	118.0	300	0.20	43.25	0.04	0.61	0.30
To Street 14, Pipe 61A - 62A						1.23	130				0.00		0.00		0.00			1.23									
Street 18																											
	43A	56A	0.35		37	0.35	37	3.7	0.44		0.00		0.00		0.00	0.00	0.35	0.35	0.12	0.56	86.5	200	0.65	26.44	0.02	0.84	0.34
	56A	57A	0.35		37	0.70	74	3.6	0.87		0.00		0.00		0.00	0.00	0.35	0.70	0.23	1.10	87.0	250	0.25	29.73	0.04	0.61	0.29
			0.06		7	0.76	81				0.00		0.00		0.00		0.06	0.76									
	57A	58A	0.46		48	1.22	129	3.6	1.49		0.00		0.00		0.00	0.00	0.46	1.22	0.40	1.89	118.0	300	0.20	43.25	0.04	0.61	0.30
To Street 14, Pipe 58A - 61A						1.22	129				0.00		0.00		0.00			1.22									

DESIGN PARAMETERS

Park Flow =	9300	L/ha/da	0.10764	l/s/Ha					
Average Daily Flow =	280	l/p/day			Industrial Peak Factor = as per MOE Graph				
Comm/Inst Flow =	28000	L/ha/da	0.3241	l/s/Ha	Extraneous Flow =		0.330	L/s/ha	
Industrial Flow =	35000	L/ha/da	0.40509	l/s/Ha	Minimum Velocity =		0.600	m/s	
Max Res. Peak Factor =	4.00				Manning's n =	(Conc)	0.013	(Pvc)	0.013
Commercial/Inst./Park Peak Factor =	1.00				Townhouse coeff=		2.7		
Institutional =	0.32	l/s/Ha			Single house coeff=		3.4		

Designed: A.K.

Checked: W.L.

Dwg. Reference: Sanitary Drainage Plan, Dwgs. No.

PROJECT: **BARRHAVEN CONSERVANCY WEST**

LOCATION: **City of Ottawa**

File Ref:

Date: **Oct 2021**

Sheet No. 4 of 6

1220_SAN_Designsheet.xlsx

SANITARY SEWER CALCULATION SHEET

Manning's n=0.013

LICENSED PROFESSIONAL ENGINEER
W. LIU
100167932
21-10-15
PROVINCE OF ONTARIO

Ottawa

LOCATION			RESIDENTIAL AREA AND POPULATION							COMM		INST		PARK		C+I+I	INFILTRATION				PIPE						
STREET	FROM M.H.	TO M.H.	AREA (ha)	UNITS	POP.	CUMULATIVE AREA (ha)	CUMULATIVE POP.	PEAK FACT.	PEAK FLOW (l/s)	AREA (ha)	ACCU. AREA (ha)	AREA (ha)	ACCU. AREA (ha)	AREA (ha)	ACCU. AREA (ha)	PEAK FLOW (l/s)	TOTAL AREA (ha)	ACCU. AREA (ha)	INFILT. FLOW (l/s)	TOTAL FLOW (l/s)	DIST (m)	DIA (mm)	SLOPE (%)	CAP. (FULL) (l/s)	RATIO Q act/Q cap	VEL. (FULL) (m/s)	VEL. (ACT.) (m/s)
Street 14																											
	82A	83A	0.19		20	0.19	20	3.7	0.24		0.00		0.00		0.00	0.00	0.19	0.19	0.06	0.30	53.5	200	0.65	26.44	0.01	0.84	0.28
To Street 16, Pipe 83A - 84A						0.19	20				0.00		0.00		0.00			0.19									
	86A	62A	0.58		61	0.58	61	3.6	0.72		0.00		0.00		0.00	0.00	0.58	0.58	0.19	0.91	105.0	200	0.95	31.97	0.03	1.02	0.45
To Street 17, Pipe 62A - 63A						0.58	61				0.00		0.00		0.00			0.58									
	82A	87A	0.12		13	0.12	13	3.7	0.16		0.00		0.00		0.00	0.00	0.12	0.12	0.04	0.20	11.0	200	0.65	26.44	0.01	0.84	0.24
	87A	88A	0.42		44	0.54	57	3.6	0.67		0.00		0.00		0.00	0.00	0.42	0.54	0.18	0.85	62.5	250	0.25	29.73	0.03	0.61	0.27
	88A	89A	0.38		40	0.92	97	3.6	1.13		0.00		0.00		0.00	0.00	0.38	0.92	0.30	1.43	62.5	250	0.25	29.73	0.05	0.61	0.31
	89A	90A	0.13		14	1.05	111	3.6	1.29		0.00		0.00		0.00	0.00	0.13	1.05	0.35	1.64	11.0	250	0.25	29.73	0.06	0.61	0.32
	90A	91A	0.04		5	1.09	116	3.6	1.35		0.00		0.00		0.00	0.00	0.04	1.09	0.36	1.71	10.0	250	3.00	103.00	0.02	2.10	0.76
To Street 28, Pipe 91A - 94A						1.09	116				0.00		0.00		0.00			1.09									
	38A	55A	0.22		23	0.22	23	3.7	0.28		0.00		0.00		0.00	0.00	0.22	0.22	0.07	0.35	61.5	200	0.65	26.44	0.01	0.84	0.29
Contribution From Street 16, Pipe 54A - 55A						1.66	177				0.00		0.00		0.00		1.66	1.88									
	55A	58A	0.17		18	2.05	218	3.5	2.48		0.00		0.00		0.00	0.00	0.17	2.05	0.68	3.15	44.5	375	0.15	67.91	0.05	0.61	0.31
Contribution From Street 18, Pipe 57A - 58A						1.22	129				0.00		0.00		0.00		1.22	3.27									
	58A	61A	0.17		18	3.44	365	3.4	4.06		0.00		0.00		0.00	0.00	0.17	3.44	1.14	5.20	44.0	375	0.15	67.91	0.08	0.61	0.36
Contribution From Street 21, Pipe 60A - 61A						1.23	130				0.00		0.00		0.00		1.23	4.67									
	61A	62A	0.15		16	4.82	511	3.4	5.59		0.00		0.00		0.00	0.00	0.15	4.82	1.59	7.18	45.0	375	0.15	67.91	0.11	0.61	0.39
To Street 17, Pipe 62A - 63A						4.82	511				0.00		0.00		0.00			4.82									
Contribution From Street 16, Pipe 85A - 86A						1.17	126				0.00		0.00		0.57		1.74	1.74									
	86A	91A	0.16		17	1.33	143	3.6	1.65		0.00		0.00		0.57	0.06	0.16	1.90	0.63	2.34	43.0	375	0.15	67.91	0.03	0.61	0.28
To Street 28, Pipe 91A - 94A						1.33	143				0.00		0.00		0.57			1.90									
Street 25																											
	85A	51A	0.53		56	0.53	56	3.6	0.66		0.00		0.00		0.00	0.00	0.53	0.53	0.17	0.84	105.0	200	0.65	26.44	0.03	0.84	0.38
To Street 17, Pipe 51A - 62A						0.53	56				0.00		0.00		0.00			0.53									
Street 23																											
	84A	50A	0.52		55	0.52	55	3.6	0.65		0.00		0.00		0.00	0.00	0.52	0.52	0.17	0.82	103.5	200	0.65	26.44	0.03	0.84	0.38
To Street 17, Pipe 50A - 51A						0.52	55				0.00		0.00		0.00			0.52									
Street 16																											
	44A	45A	0.11		12	0.11	12	3.7	0.14		0.00		0.00		0.00	0.00	0.11	0.11	0.04	0.18	13.5	200	1.60	41.49	0.00	1.32	0.32
	45A	48A	0.20		21	0.31	33	3.7	0.39		0.00		0.00		0.00	0.00	0.20	0.31	0.10	0.50	50.0	250	0.25	29.73	0.02	0.61	0.22
To Street 17, Pipe 48A - 49A						0.31	33				0.00		0.00		0.00			0.31									
	46A	47A	0.10		11	0.10	11	3.7	0.13		0.00		0.00		0.00	0.00	0.10	0.10	0.03	0.17	10.0	200	0.65	26.44	0.01	0.84	0.23
	47A	48A	0.24		25	0.34	36	3.7	0.43		0.00		0.00		0.00	0.00	0.24	0.34	0.11	0.54	61.5	250	0.25	29.73	0.02	0.61	0.23
To Street 17, Pipe 48A - 49A						0.34	36				0.00		0.00		0.00			0.34									
	44A	43A	0.12		13	0.12	13	3.7	0.16		0.00		0.00		0.00	0.00	0.12	0.12	0.04	0.20	32.5	200	0.65	26.44	0.01	0.84	0.24
	43A	42A	0.15		16	0.27	29	3.7	0.35		0.00		0.00		0.00	0.00	0.15	0.27	0.09	0.44	40.5	250	0.25	29.73	0.01	0.61	0.21
	42A	52A	0.04		5	0.31	34	3.7	0.41		0.00		0.00		0.00	0.00	0.04	0.31	0.10	0.51	10.0	250	0.25	29.73	0.02	0.61	0.23
	52A	53A	0.33		35	0.64	69	3.6	0.81		0.00		0.00		0.00	0.00	0.33	0.64	0.21	1.02	77.5	250	0.25	29.73	0.03	0.61	0.28
	53A	54A	0.39		41	1.03	110	3.6	1.28		0.00		0.00		0.00	0.00	0.39	1.03	0.34	1.62	77.5	300	0.20	43.25	0.04	0.61	0.29

DESIGN PARAMETERS

Park Flow =	9300	L/ha/da	0.10764	l/s/Ha	
Average Daily Flow =	280	l/p/day		Industrial Peak Factor = as per MOE Graph	
Comm/Inst Flow =	28000	L/ha/da	0.3241	l/s/Ha	Extraneous Flow = 0.330 L/s/ha
Industrial Flow =	35000	L/ha/da	0.40509	l/s/Ha	Minimum Velocity = 0.600 m/s
Max Res. Peak Factor =	4.00				Manning's n = (Conc) 0.013 (Pvc) 0.013
Commercial/Inst./Park Peak Factor =	1.00				Townhouse coeff= 2.7
Institutional =	0.32	l/s/Ha			Single house coeff= 3.4

Designed: A.K.

Checked: W.L.

Dwg. Reference: Sanitary Drainage Plan, Dwgs. No.

PROJECT: **BARRHAVEN CONSERVANCY WEST**

LOCATION: **City of Ottawa**

File Ref:

Date: **Oct 2021**

Sheet No. 5 of 6

1226_SAN_Designsheet.xlsx

SANITARY SEWER CALCULATION SHEET

Manning's n=0.013

LOCATION			RESIDENTIAL AREA AND POPULATION							COMM		INSTIT		PARK		C+I+I	INFILTRATION				PIPE						
STREET	FROM M.H.	TO M.H.	AREA (ha)	UNITS	POP.	CUMULATIVE AREA (ha)	CUMULATIVE POP.	PEAK FACT.	PEAK FLOW (l/s)	AREA (ha)	ACCU. AREA (ha)	AREA (ha)	ACCU. AREA (ha)	AREA (ha)	ACCU. AREA (ha)	PEAK FLOW (l/s)	TOTAL AREA (ha)	ACCU. AREA (ha)	INFILT. FLOW (l/s)	TOTAL FLOW (l/s)	DIST (m)	DIA (mm)	SLOPE (%)	CAP. (FULL) (l/s)	RATIO Q act/Q cap	VEL. (FULL) (m/s)	VEL. (ACT.) (m/s)
			0.06		7	1.09	117				0.00		0.00		0.00		0.06	1.09									
	54A	55A	0.57		60	1.66	177	3.5	2.03		0.00		0.00		0.00	0.00	0.57	1.66	0.55	2.57	118.0	375	0.15	67.91	0.04	0.61	0.29
To Street 14, Pipe 55A - 58A						1.66	177				0.00		0.00		0.00			1.66									
	46A	78A	0.20		21	0.20	21	3.7	0.25		0.00		0.00		0.00	0.00	0.20	0.20	0.07	0.32	50.0	200	0.65	26.44	0.01	0.84	0.28
	78A	79A	0.12		13	0.32	34	3.7	0.41		0.00		0.00		0.00	0.00	0.12	0.32	0.11	0.51	11.0	250	0.25	29.73	0.02	0.61	0.23
	79A	80A	0.11		12	0.43	46	3.7	0.55		0.00		0.00	0.57	0.57	0.06	0.68	1.00	0.33	0.94	27.5	300	0.20	43.25	0.02	0.61	0.25
	80A	81A	0.02		3	0.45	49	3.7	0.58		0.00		0.00		0.57	0.06	0.02	1.02	0.34	0.98	11.0	300	0.20	43.25	0.02	0.61	0.25
	81A	83A	0.05		6	0.50	55	3.6	0.65		0.00		0.00		0.57	0.06	0.05	1.07	0.35	1.06	29.0	300	1.00	96.70	0.01	1.37	0.44
Contribution From Street 14, Pipe 82A - 83A						0.19	20				0.00		0.00		0.00		0.19	1.26									
	83A	84A	0.06		7	0.75	82	3.6	0.96		0.00		0.00		0.57	0.06	0.06	1.32	0.44	1.46	22.5	300	0.20	43.25	0.03	0.61	0.28
	84A	85A	0.21		22	0.96	104	3.6	1.21		0.00		0.00		0.57	0.06	0.21	1.53	0.50	1.78	58.5	300	0.20	43.25	0.04	0.61	0.30
	85A	86A	0.21		22	1.17	126	3.6	1.46		0.00		0.00		0.57	0.06	0.21	1.74	0.57	2.09	59.5	300	0.20	43.25	0.05	0.61	0.31
To Street 14, Pipe 86A - 91A						1.17	126				0.00		0.00		0.57			1.74									
Street 17																											
Contribution From Street 16, Pipe 45A - 48A						0.31	33				0.00		0.00		0.00		0.31	0.31									
Contribution From Street 16, Pipe 47A - 48A						0.34	36				0.00		0.00		0.00		0.34	0.65									
	48A	49A	0.29		31	0.94	100	3.6	1.17		0.00		0.00		0.00	0.00	0.29	0.94	0.31	1.48	66.5	250	0.30	32.57	0.05	0.66	0.33
	49A	50A	0.37		39	1.31	139	3.6	1.60		0.00		0.00		0.00	0.00	0.37	1.31	0.43	2.04	88.5	250	0.90	56.42	0.04	1.15	0.53
Contribution From Street 23, Pipe 8400A - 50A						0.52	55				0.00		0.00		0.00		0.52	1.83									
	50A	51A	0.15		16	1.98	210	3.5	2.39		0.00		0.00		0.00	0.00	0.15	1.98	0.65	3.04	58.5	250	0.25	29.73	0.10	0.61	0.39
Contribution From Street 25, Pipe 8500A - 51A						0.53	56				0.00		0.00		0.00		0.53	2.51									
	51A	62A	0.16		17	2.67	283	3.5	3.18		0.00		0.00		0.00	0.00	0.16	2.67	0.88	4.06	59.5	300	0.20	43.25	0.09	0.61	0.38
Contribution From Street 14, Pipe 61A - 62A						4.82	511				0.00		0.00		0.00		4.82	7.49									
Contribution From Street 14, Pipe 8600A - 62A						0.58	61				0.00		0.00		0.00		0.58	8.07									
	62A	63A	0.10		11	8.17	866	3.3	9.18		0.00		0.00		0.00	0.00	0.10	8.17	2.70	11.88	63.5	375	0.15	67.91	0.17	0.61	0.46
Contribution From Street 3, Pipe 41A - 63A						16.48	295				0.00		0.00		2.90		19.38	27.55		0.00							
	63A	64A	0.11		12	24.76	1173	3.2	12.18		0.00		0.00		2.90	0.31	0.11	27.66	9.13	21.62	36.0	375	0.15	67.91	0.32	0.61	0.54
	64A	70A	0.09		10	24.85	1183	3.2	12.27		0.00		0.00		2.90	0.31	0.09	27.75	9.16	21.74	26.0	375	0.15	67.91	0.32	0.61	0.54
Contribution From Street 6, Pipe 69A - 70A						1.09	114				0.00		0.00		0.00		1.09	28.84									
	70A	71A	0.43		45	26.37	1342	3.2	13.79		0.00		0.00		2.90	0.31	0.43	29.27	9.66	23.76	80.0	375	0.15	67.91	0.35	0.61	0.56
Contribution From Street 13, Pipe 33A - 71A						10.69	1130				0.00		0.00		0.00		10.69	39.96									
	71A	72A	0.15		16	37.21	2488	3.0	24.25		0.00		0.00		2.90	0.31	0.15	40.11	13.24	37.80	10.5	375	0.15	67.91	0.56	0.61	0.63
	72A	76A	0.17		18	37.38	2506	3.0	24.41		0.00		0.00		2.90	0.31	0.17	40.28	13.29	38.02	40.0	375	0.15	67.91	0.56	0.61	0.63
Contribution From Street 20, Pipe 75A - 76A						0.87	92				0.00		0.00		0.00		0.87	41.15									
	76A	77A	0.53		56	38.78	2654	3.0	25.71		0.00		0.00		2.90	0.31	0.53	41.68	13.75	39.78	81.5	375	0.15	67.91	0.59	0.61	0.64
	77A	103A	0.71		74	39.49	2728	3.0	26.36		0.00		0.00		2.90	0.31	0.71	42.39	13.99	40.66	94.5	375	0.15	67.91	0.60	0.61	0.64
Contribution From Street 29, Pipe 102A - 103A						5.86	624				0.00		0.00		0.57		6.43	48.82									
	103A	107A	0.06		7	45.41	3359	2.9	31.79		0.00		0.00		3.47	0.37	0.06	48.88	16.13	48.29	18.0	375	0.15	67.91	0.71	0.61	0.67
Contribution From Street30, Pipe 106A - 107A						0.30	32				0.00		0.00		0.00		0.30	49.18									
	107A	108A	0.12		13	45.83	3404	2.9	32.17		0.00		0.00		3.47	0.37	0.12	49.30	16.27	48.81	20.0	375	0.15	67.91	0.72	0.61	0.67
To Street 15, Pipe 108A - 109A						45.83	3404				0.00		0.00		3.47			49.30		0.00							
Street 15																											
Contribution From Street 17, Pipe 107A - 108A						45.83	3404				0.00		0.00		3.47		49.30	49.30		0.00							
	108A	PS				45.83	3404	2.9	32.17		0.00		0.00		3.47	0.37	0.00	49.30	16.27	48.81	28.0	450	0.15	110.42	0.44	0.69	0.67

DESIGN PARAMETERS

Park Flow =	9300	L/ha/da	0.10764	l/s/Ha				
Average Daily Flow =	280	l/p/day			Industrial Peak Factor = as per MOE Graph			
Comm/Inst Flow =	28000	L/ha/da	0.3241	l/s/Ha	Extraneous Flow =		0.330	L/s/ha
Industrial Flow =	35000	L/ha/da	0.40509	l/s/Ha	Minimum Velocity =		0.600	m/s
Max Res. Peak Factor =	4.00				Manning's n =	(Conc)	0.013	(Pvc) 0.013
Commercial/Inst./Park Peak Factor =	1.00				Townhouse coeff=		2.7	
Institutional =	0.32	l/s/Ha			Single house coeff=		3.4	

Designed: A.K.

Checked: W.L.

Dwg. Reference: Sanitary Drainage Plan, Dwgs. No.

PROJECT: **BARRHAVEN CONSERVANCY WEST**

LOCATION: **City of Ottawa**

File Ref:

Date: Oct 2021

Sheet No. 6 of 6

1226 SAN Designsheet.xlsx

SANITARY SEWER CALCULATION SHEET

Excerpted from Master infrastructure Review (MIR) prepared by DSEL dated July 27, 2021

Ottawa

Manning's n=0.013

LOCATION			RESIDENTIAL AREA AND POPULATION							COMM		INSTIT		PARK		C+I+I	INFILTRATION				PIPE						
STREET	FROM M.H.	TO M.H.	AREA (ha)	PPHA*	POP.	CUMULATIVE AREA (ha)	CUMULATIVE POP.	PEAK FACT.	PEAK FLOW (l/s)	AREA (ha)	ACCU. AREA (ha)	AREA (ha)	ACCU. AREA (ha)	AREA (ha)	ACCU. AREA (ha)	PEAK FLOW (l/s)	TOTAL AREA (ha)	ACCU. AREA (ha)	INFILT. FLOW (l/s)	TOTAL FLOW (l/s)	DIST (m)	DIA (mm)	SLOPE (%)	CAP. (FULL) (l/s)	RATIO Q act/Q cap	VEL. (FULL) (m/s)	VEL. (ACT.) (m/s)
SANITARY TRUNK 2																											
	2002A	2004A	0.56	104	58	0.56	58	3.6	0.69		0.00		0.00		0.00	0.00	0.56	0.56	0.18	0.87	58.5	200	0.35	19.40	0.04	0.62	0.31
	2004A	2006A	0.22	104	23	0.78	81	3.6	0.95		0.00		0.00		0.00	0.00	0.22	0.78	0.26	1.21	58.5	200	0.35	19.40	0.06	0.62	0.34
	2006A	2008A	0.21	104	22	0.99	103	3.6	1.20		0.00		0.00		0.00	0.00	0.21	0.99	0.33	1.53	58.5	200	0.35	19.40	0.08	0.62	0.36
	2008A	2010A	0.22	104	23	1.21	126	3.6	1.46		0.00		0.00		0.00	0.00	0.22	1.21	0.40	1.86	58.5	200	0.35	19.40	0.10	0.62	0.39
	2010A	2012A	0.12	104	12	1.33	138	3.6	1.60		0.00		0.00		0.00	0.00	0.12	1.33	0.44	2.04	29.5	200	0.35	19.40	0.10	0.62	0.40
	2012A	2013A	0.17	104	18	1.50	156	3.5	1.79		0.00		0.00		0.00	0.00	0.17	1.50	0.50	2.29	39.5	200	0.35	19.40	0.12	0.62	0.41
	2013A	2014A	0.15	104	16	1.65	172	3.5	1.97		0.00		0.00		0.00	0.00	0.15	1.65	0.54	2.51	35.0	200	0.35	19.40	0.13	0.62	0.42
	2014A	2015A	0.11	104	11	1.76	183	3.5	2.09		0.00		0.00		0.00	0.00	0.11	1.76	0.58	2.67	28.0	200	0.35	19.40	0.14	0.62	0.43
	2015A	2036A	0.14	104	15	1.90	198	3.5	2.25		0.00		0.00		0.00	0.00	0.14	1.90	0.63	2.88	36.0	200	0.35	19.40	0.15	0.62	0.44
	2036A	2037A	7.40	104	770	9.30	967	3.2	10.18		0.00		0.00		0.00	0.00	7.40	9.30	3.07	13.25	53.5	250	0.25	29.73	0.45	0.61	0.59
	2037A	2038A	0.23	104	24	9.53	991	3.2	10.41		0.00		0.00		0.00	0.00	0.23	9.53	3.14	13.56	61.0	250	0.25	29.73	0.46	0.61	0.59
	2038A	2058A	4.24	104	441	13.77	1432	3.2	14.64		0.00		0.00		0.00	0.00	4.24	13.77	4.54	19.19	61.0	300	0.20	43.25	0.44	0.61	0.59
	2058A	1061A	0.16	104	17	13.93	1449	3.2	14.80		0.00		0.00		0.00	0.00	0.16	13.93	4.60	19.40	59.0	300	0.20	43.25	0.45	0.61	0.59
	1061A	1063A	6.64	104	691	20.57	2139	3.1	21.15		0.00		0.00		0.00	0.00	6.64	20.57	6.79	27.94	62.0	375	0.15	67.91	0.41	0.61	0.58
	1063A	1064A	0.22	104	23	20.79	2162	3.0	21.35		0.00		0.00		0.00	0.00	0.22	20.79	6.86	28.21	60.5	375	0.15	67.91	0.42	0.61	0.58
	1064A	1096A	0.22	104	23	21.01	2185	3.0	21.56		0.00		0.00		0.00	0.00	0.22	21.01	6.93	28.49	59.5	375	0.15	67.91	0.42	0.61	0.59
	1096A	1105A	9.80	104	1019	30.81	3204	2.9	30.47		0.00		0.00		0.00	0.00	9.80	30.81	10.17	40.64	67.0	375	0.15	67.91	0.60	0.61	0.64
	1105A	1111A	0.22	104	23	31.03	3227	2.9	30.67		0.00		0.00		0.00	0.00	0.22	31.03	10.24	40.91	56.5	375	0.15	67.91	0.60	0.61	0.64
	1111A	1120A				31.03	3227	2.9	30.67		0.00		0.00		0.00	0.00	0.00	31.03	10.24	40.91	58.5	375	0.15	67.91	0.60	0.61	0.64
			4.32	85	367	35.35	3594	2.0	23.30		0.00		0.00		0.00		4.32	35.35									
	1120A	5004A	2.56	104	266	37.91	3861	2.9	36.00		0.00		0.00		0.00	0.00	2.56	37.91	12.51	48.51	100.0	450	0.15	110.42	0.44	0.69	0.67
	5004A	PS	0.35	104	36	38.26	3897	2.9	36.31		0.00		0.00		0.00	0.00	0.35	38.26	12.63	48.93	100.0	450	0.15	110.42	0.44	0.69	0.67
To Barrhaven Conservancy East:						38.26	3897				0.00		0.00		0.00			38.26									

* PPHA calculated based on a weighted average across the site, using the single house and townhouse coefficents of 3.4 and 2.7 people per unit respectively

DESIGN PARAMETERS

Park Flow =	9300	L/ha/da	0.10764	l/s/Ha
Average Daily Flow =	280	l/p/day		
Comm/Inst Flow =	28000	L/ha/da	0.3241	l/s/Ha
Industrial Flow =	35000	L/ha/da	0.40509	l/s/Ha
Max Res. Peak Factor =	4.00			
Commercial/Inst./Park Peak Factor =	1.00			
Institutional =	0.32	l/s/Ha		

Industrial Peak Factor = as per MOE Graph
Extraneous Flow = 0.330 L/s/ha
Minimum Velocity = 0.600 m/s
Manning's n = (Conc) 0.013 (Pvc) 0.013
Townhouse coeff= 2.7
Single house coeff= 3.4

Designed: R.B.

Checked: D.A.

Dwg. Reference: Sanitary Drainage Plan, Dwgs. No. 4

PROJECT: **BARRHAVEN CONSERVANCY WEST**

LOCATION: **City of Ottawa**

File Ref: 16-891

Date: July 2021

Sheet No. 1 of 1

SANITARY SEWER CALCULATION SHEET

Ottawa

Manning's n=0.013

LOCATION STREET	FROM M.H.	TO M.H.	RESIDENTIAL AREA AND POPULATION AREA (ha)	UNITS	UNITS Singles	UNITS Townhouse	POP.	CUMULATIVE AREA (ha)	CUMULATIVE POP.	PEAK FACT.	PEAK FLOW (l/s)	COMM AREA (ha)	COMM ACCU. AREA (ha)	INSTIT AREA (ha)	INSTIT ACCU. AREA (ha)	PARK AREA (ha)	PARK ACCU. AREA (ha)	ICI Ratio	ICI Peaking Factor	I+C+I+P PEAK FLOW (l/s)	INFILTRATION TOTAL AREA (ha)	INFILTRATION ACCU. AREA (ha)	INFILT. FLOW (l/s)	TOTAL FLOW (l/s)	PIPE DIST (m)	DIA (mm)	SLOPE (%)	CAP. (FULL) (l/s)	RATIO Q act/Q cap	VEL. (FULL) (m/s)	VEL. (ACT.) (m/s)
rue Moonbeam Street																															
	9A	10A	0.49	11	11		38	0.49	38	3.67	0.45										0.49	0.49	0.16	0.61	56.5	200	0.65	26.44	0.02	0.84	0.35
	10A	11A	0.38	9	9		31	0.87	69	3.63	0.81										0.38	0.87	0.29	1.10	73.0	200	1.35	38.11	0.03	1.21	0.53
To promenade Albion Falls Drive, Pipe 11A - 12A								0.87	69													0.87									
rue Douglas Fir Street																															
	7A	8A	0.73	17	17		58	0.73	58	3.64	0.68										0.73	0.73	0.24	0.93	114.0	200	0.80	29.34	0.03	0.93	0.42
To promenade Albion Falls Drive, Pipe 8A - 11A								0.73	58													0.73									
promenade Beatrice Peak Drive																															
	1A	2A	0.48	11		11	30	0.48	30	3.68	0.36										0.48	0.48	0.16	0.52	85.5	200	0.65	26.44	0.02	0.84	0.33
	2A	4A	0.40	12		12	33	0.88	63	3.63	0.74										0.40	0.88	0.29	1.03	103.5	200	0.35	19.40	0.05	0.62	0.33
To promenade Albion Falls Drive, Pipe 4A - 5A								0.88	63													0.88									
promenade Albion Falls Drive																															
	3A	4A	0.23	5	5		17	0.23	17	3.71	0.20										0.23	0.23	0.08	0.28	53.0	200	1.25	36.67	0.01	1.17	0.34
Contribution From promenade Beatrice Peak Drive, Pipe 2A - 4A								0.88	63												0.88	1.11									
	4A	5A	0.15	3	3		11	1.26	91	3.60	1.06										0.15	1.26	0.42	1.48	34.5	200	0.35	19.40	0.08	0.62	0.36
PARK	Ctrl MH 500A	5A														0.67	0.67			0.11	0.67	0.67	0.22	0.33	11.0	200	0.65	26.44	0.01	0.84	0.28
	5A	6A	0.13	2	2		7	1.39	98	3.60	1.14						0.67			0.11	0.13	2.06	0.68	1.93	14.0	200	0.35	19.40	0.10	0.62	0.39
	6A	8A	0.22	4	4		14	1.61	112	3.58	1.30						0.67			0.11	0.22	2.28	0.75	2.16	55.5	200	0.35	19.40	0.11	0.62	0.41
Contribution From rue Douglas Fir Street, Pipe 7A - 8A								0.73	58												0.73	3.01									
	8A	11A	0.22	4	4		14	2.56	184	3.53	2.10						0.67			0.11	0.22	3.23	1.07	3.28	60.0	200	0.35	19.40	0.17	0.62	0.46
Contribution From rue Moonbeam Street, Pipe 10A - 11A								0.87	69												0.87	4.10									
	11A	12A	0.15	2	2		7	3.58	260	3.48	2.94						0.67			0.11	0.15	4.25	1.40	4.45	32.5	200	0.35	19.40	0.23	0.62	0.50
	12A	24A	0.04					3.62	260	3.48	2.94						0.67			0.11	0.04	4.29	1.42	4.46	28.5	200	0.35	19.40	0.23	0.62	0.50
To croissant Point Prim Crescent, Pipe 24A - 25A								3.62	260								0.67					4.29									
voie Horseshoe Falls Way																															
	14A	18A	0.22	7		7	19	0.22	19	3.71	0.23										0.22	0.22	0.07	0.30	58.5	200	1.00	32.80	0.01	1.04	0.32
To rue Coppermine Street, Pipe 18A - 19A								0.22	19													0.22									
	18A	25A	0.22	7		7	19	0.22	19	3.71	0.23										0.22	0.22	0.07	0.30	58.0	200	0.65	26.44	0.01	0.84	0.27
To Unknown Road6 - 06, Pipe 25A - 26A								0.22	19													0.22									
rue Coppermine Street																															
Contribution From voie Horseshoe Falls Way, Pipe 14A - 18A								0.22	19												0.22	0.22									
	18A	19A	0.41	12	12		41	0.63	60	3.64	0.71										0.41	0.63	0.21	0.92	74.5	200	0.35	19.40	0.05	0.62	0.31
	19A	20A	0.38	9	9		31	1.01	91	3.60	1.06										0.38	1.01	0.33	1.40	74.5	200	0.75	28.40	0.05	0.90	0.47
To croissant Point Prim Crescent, Pipe 20A - 21A								1.01	91													1.01									
croissant Point Prim Crescent																															
	13A	14A	0.28	5	5		17	0.28	17	3.71	0.20										0.28	0.28	0.09	0.30	53.5	200	0.95	31.97	0.01	1.02	0.31
	14A	15A	0.41	11	11		38	0.69	55	3.64	0.65										0.41	0.69	0.23	0.88	69.0	200	0.95	31.97	0.03	1.02	0.43
	15A	16A	0.41	9	9		31	1.10	86	3.61	1.01										0.41	1.10	0.36	1.37	72.5	200	0.35	19.40	0.07	0.62	0.35
	16A	17A	0.13	2	2		7	1.23	93	3.60	1.09										0.13	1.23	0.41	1.49	11.0	200	0.35	19.40	0.08	0.62	0.36
	17A	20A	0.22	4	4		14	1.45	107	3.59	1.24										0.22	1.45	0.48	1.72	52.0	200	0.35	19.40	0.09	0.62	0.38
Contribution From rue Coppermine Street, Pipe 19A - 20A								1.01	91												1.01	2.46									
	20A	21A	0.06					2.52	198	3.52	2.26										0.06	2.52	0.83	3.09	35.5	200	0.35	19.40	0.16	0.62	0.45

LICENSED PROFESSIONAL ENGINEER
W. LIU
100187932
PROVINCE OF ONTARIO

DESIGN PARAMETERS

Park Flow =	9300	L/ha/da
Average Daily Flow =	280	l/p/day
Comm/Inst Flow =	28000	L/ha/da
Industrial Flow =	35000	L/ha/da
Max Res. Peak Factor =	4.00	
Park Peak Factor =	1.50	

Industrial Peak Factor = as per MOE Graph
Extraneous Flow = 0.330 L/s/ha
Minimum Velocity = 0.600 m/s
Manning's n = (Conc) 0.013 (Pvc) 0.013
Townhouse coeff= 2.7
Single house coeff= 3.4

Designed: P.P.	PROJECT: BARRHAVEN CONSERVANCY PHASE 1
Checked: W.L.	LOCATION: City of Ottawa
Dwg. Reference: Sanitary Drainage Plan, Dwg. No. 33	File Ref: 16-891 · Date: January, 2019 · Sheet No. 1 of 2

891_San3.xlsx

SANITARY SEWER CALCULATION SHEET

Manning's n=0.013

Ottawa

LOCATION: STREET	FROM M.H.	TO M.H.	RESIDENTIAL AREA AND POPULATION: AREA (ha)	UNITS	UNITS Singles	UNITS Townhouse	POP.	CUMULATIVE AREA (ha)	CUMULATIVE POP.	PEAK FACT.	PEAK FLOW (l/s)	COMM: AREA (ha)	COMM: ACCU. AREA (ha)	INSTIT: AREA (ha)	INSTIT: ACCU. AREA (ha)	PARK: AREA (ha)	PARK: ACCU. AREA (ha)	ICI Ratio	ICI Peaking Factor	I+C+I+P: PEAK FLOW (l/s)	INFILTRATION: TOTAL AREA (ha)	INFILTRATION: ACCU. AREA (ha)	INFILTRATION: INFILT. FLOW (l/s)	TOTAL FLOW (l/s)	PIPE: DIST (m)	PIPE: DIA (mm)	PIPE: SLOPE (%)	PIPE: CAP. (FULL) (l/s)	PIPE: RATIO Q act/Q cap	PIPE: VEL. (FULL) (m/s)	PIPE: VEL. (ACT.) (m/s)
	21A	22A	0.04					2.56	198	3.52	2.26										0.04	2.56	0.84	3.10	21.0	200	0.35	19.40	0.16	0.62	0.45
	22A	23A	0.01					2.57	198	3.52	2.26										0.01	2.57	0.85	3.11	8.0	200	0.35	19.40	0.16	0.62	0.45
	23A	24A	0.26	6	6		21	2.83	219	3.51	2.49										0.26	2.83	0.93	3.42	42.0	200	0.80	29.34	0.12	0.93	0.62
Contribution From promenade Albion Falls Drive, Pipe 12A - 24A								3.62	260								0.67				4.29	7.12									
	24A	25A	0.49	12	12		41	6.94	520	3.37	5.68						0.67			0.11	0.49	7.61	2.51	8.30	91.5	200	0.35	19.40	0.43	0.62	0.59
Contribution From voie Horseshoe Falls Way, Pipe 18A - 25A								0.22	19												0.22	7.83									
Upper Pipe	26A	25A	0.30	5	5		17														0.30	0.30	0.10	0.10	66.5	200	0.65	26.44	0.00	0.84	0.19
Lower Pipe	25A	26A						7.46	556	3.36	6.05						0.67			0.11	0.00	8.13	2.68	8.85	66.5	200	0.35	19.40	0.46	0.62	0.60
To promenade Chapman Mills Drive, Pipe 26A - Ex. MH 13								7.46	556								0.67					8.13									
promenade Chapman Mills Drive																															
	28A	29A	0.41	7		7	19	0.41	19	3.71	0.23										0.41	0.41	0.14	0.36	42.0	200	0.65	26.44	0.01	0.84	0.29
	29A	30A	0.28	6		6	17	0.69	36	3.67	0.43										0.28	0.69	0.23	0.66	60.0	200	0.35	19.40	0.03	0.62	0.29
	30A	31A	0.44	9		9	25	1.13	61	3.64	0.72										0.44	1.13	0.37	1.09	120.0	200	0.35	19.40	0.06	0.62	0.33
	31A	*Ex. MH 11*						1.13	61	3.64	0.72										0.00	1.13	0.37	1.09	18.5	200	3.40	60.48	0.02	1.93	0.72
To Existing Sanitary Trunk, *Ex. Pipe 11 - 12*								1.13	61													1.13									
	27A	26A	0.50	14		14	38	0.50	38	3.67	0.45						0.00			0.00	0.50	0.50	0.17	0.62	98.0	200	0.65	26.44	0.02	0.84	0.35
Contribution From croissant Point Prim Crescent, Pipe 25A - 26A								7.46	556								0.67				8.13	8.13									
	26A	*Ex. MH 13*						7.96	594	3.35	6.44						0.67			0.11	0.00	8.63	2.85	9.40	23.5	200	0.35	19.40	0.48	0.62	0.61
To Existing Sanitary Trunk, *Ex. Pipe 13 - 14*								7.96	594								0.67					8.63									

Conservancy Phase 1 - Flows and population tributary to South Nepean Collector

LICENSED PROFESSIONAL ENGINEER
W. LIU
100167932
PROVINCE OF ONTARIO

DESIGN PARAMETERS

Park Flow =	9300	L/ha/da
Average Daily Flow =	280	l/p/day
Comm/Inst Flow =	28000	L/ha/da
Industrial Flow =	35000	L/ha/da
Max Res. Peak Factor =	4.00	
Park Peak Factor =	1.50	

Industrial Peak Factor = as per MOE Graph

Extraneous Flow =		0.330	L/s/ha	
Minimum Velocity =		0.600	m/s	
Manning's n =	(Conc)	0.013	(Pvc)	0.013
Townhouse coeff=		2.7		
Single house coeff=		3.4		

Designed: P.P.	PROJECT: BARRHAVEN CONSERVANCY PHASE 1
Checked: W.L.	LOCATION: City of Ottawa
Dwg. Reference: Sanitary Drainage Plan, Dwg. No: 33	File Ref: 16-891 / Date: January, 2019 / Sheet No. 2 of 2

891_San3.xlsx

SANITARY SEWER CALCULATION SHEET

104 people/Ha	Population Density (Conservancy West)
83 people/Ha	Population Density (Conservancy East)

Ottawa

Manning's n=0.013

LOCATION			RESIDENTIAL AREA AND POPULATION						COMM		INSTIT		PARK		C+I+I	INFILTRATION				PIPE						
STREET	FROM M.H.	TO M.H.	AREA (ha)	POP.	CUMULATIVE AREA (ha)	CUMULATIVE POP.	PEAK FACT.	PEAK FLOW (l/s)	AREA (ha)	ACCU. AREA (ha)	AREA (ha)	ACCU. AREA (ha)	AREA (ha)	ACCU. AREA (ha)	PEAK FLOW (l/s)	TOTAL AREA (ha)	ACCU. AREA (ha)	INFILT. FLOW (l/s)	TOTAL FLOW (l/s)	DIST (m)	DIA (mm)	SLOPE (%)	CAP. (FULL) (l/s)	RATIO Q act/Q cap	VEL. (FULL) (m/s)	VEL. (ACT.) (m/s)
										0.00				0.00	0.00	0.00	0.00	0.000	0.00							
Extracted from SNC Novatech Ph3 design		EX SANMH1[1]	105.8	10974	105.8	10974.0	2.53	89.98	179.17	179.17	17.25	17.25		0.00	92.69	302.22	302.22	99.73	282.40	165.0	914.4	0.10	597.22	0.47	0.91	0.89
at Strandherd & CMD intersection		See Note [2]	31.5	3116	137.3	14090	2.44	111.42		179.17				0.00	87.10	31.50	333.7	110.12	308.64	50.0	914.4	0.10	597.22	0.52	0.91	0.91
CONSERVANCY WEST [3]		EX SANMH8	45.83	3404	183.1	17494	2.37	134.36		179.17			3.5	3.50	87.66	49.33	383.03	126.40	348.42	125.0	914.4	0.10	597.22	0.58	0.91	0.94
CONSERVANCY EAST [3]		EX SANMH8	53.67	4568	236.8	22062	2.29	163.73	4.21	183.38			4.30	7.80	90.40	62.18	445.21	146.92	401.05	260.0	914.4	0.08	534.17	0.75	0.81	0.89
					236.8	22062	2.29	163.73		183.38				7.80	90.40	0.00	445.21	146.92	401.05		914.4	0.05	422.30	0.95	0.64	0.73

NOTES:

(1) Refer to Novatech Drawing No. 19 - South Nepean Collector (SNC) Sewer Phase 2 - Strandherd Rive to Jockvale Road (ISD14-2033) in Appendix C

(2) Derived from Tributary areas "A6-C" and "A6-D" from Novatech's "Sanitary Drainage Areas and Land Use - Fig. 1" plan dated August 2015 (See Appendix C of DSEL report) = 4.87ha and 17.56ha and derived from Barrhaven Conservancy Phase 1 design sheet (see Appendix C of DSEL report) = 1.13ha + 7.96ha

(3) Based on population densities of 104 people/ha for WEST and 83 people/ha for EAST. See Conservancy East sanitary design sheet

DESIGN PARAMETERS

Park Flow =	9300	L/ha/da			
Average Daily Flow =	280	l/p/day	Industrial Peak Factor = as per MOE Graph		
Comm/Inst Flow =	28000	L/ha/da	Extraneous Flow =	0.330	L/s/ha
Industrial Flow =	35000	L/ha/da	Minimum Velocity =	0.600	m/s
Max Res. Peak Factor =	4.00		Manning's n =	0.000	
Commercial/Inst./Park Peak Factor =	1.50		Townhouse coeff=	2.7	
Institutional	0.32	l/s/Ha	Single house coeff=	3.4	

Designed: KLM

Checked: KLM

Dwg. Reference:

PROJECT: **Barrhaven Conservancy - Evaluation of SNC Flows**

LOCATION: **City of Ottawa**

File Ref: 1226.000

Date: October 2021

Sheet No. 1 of 1

Total flow including Conservancy Lands is 401.05 L/s which is LESS than the prior 423.6 L/s determined in the 2015 Novatech assessment of flows at the same location in the South Nepean Collector (SNC) sewer.

Based on Novatech's SNC as-builts, the minimum as-built slope is 0.05% downstream of the existing SANMH8 connection point. Other as-built slopes range from 0.07 to 0.15.

APPENDIX D

STORMWATER

Conservation Partners
Partenaires en conservation

Mississippi Valley Conservation Authority | Rideau Valley Conservation Authority | South Nation Conservation de la Nation Sud

May 31, 2020

City of Ottawa
110 Laurier Avenue,
Ottawa, ON K1P 1J1

Attention: Doug James

Subject: **Barrhaven Conservancy Development Corporation**
Status of As-Built Grading
Related: RVCA Permit # RV5-4419 and RV5-1718)
Vacant land on the north side of the Jock River generally bounded by Highway 416 and the Fraser Clarke Creek, City of Ottawa

Dear Mr. James:

The RVCA has reviewed information recently submitted by David Schaeffer Engineering Ltd. including as-built grades in support of works approved by the Rideau Valley Conservation Authority under Section 28 of the Conservation Authorities Act (Permit File Number: RV5-4419 and RV5-1718). The RVCA offers the following comments related to future development proposed for the area within the scope of approved the permits.

The subject lands as identified as part of Lots 11, 12, 13, 14, 15 former geographic Township of Nepean, Concessions 3 & 4, now in the City of Ottawa have been addressed through the general placement of fill and the formal construction of a berm around the perimeter of four blocks within the subject lands. The site specific elevations of the berm have been reviewed by the RVCA and are generally accepted as being appropriate as removing these lands from the floodplain in accordance with the aforementioned approved permits.

The detailed grading plans submitted by David Schaeffer Engineering Ltd. titled As Constructed plan of Berms and Cut Areas – Barrhaven Conservancy", dated May 27, 2020, prepared by Adam Fobert, P.Eng. of DSEL, DSEL File Number 16891 using the following resources:

- Orthoimagery Survey, dated April 20, 2020, acquired and processed by First Base Solutions a division of JD Barnes Ltd and certified by Chris Fox, O.L.S., A.L.S., P. Eng. of JD Barnes Ltd, file reference number 2037OTTA0001;
- Topographic Detail of Part of Lot 13, 14,&15 Concession 3&4, dated May 6, 2020, certified by Chris Fox, O.L.S., A.L.S., P. Eng. of JD Barnes Ltd, file reference number 16-10-127-00;

- Contractor as-built collected by the Tomlinson Group of Companies of Phase 1 dated May 15, 2020, reviewed by Jeremy Chouindard, EIT and certified by Stephen Pichette, P.Eng. of DSEL

The above information indicates that land within the berm have generally been raised to exceed the flood elevation cross sections throughout the project area. However, it is noted that as this is considered an active construction site the presence of lower areas to manage construction, on-site erosion and sediment control show lower elevations. These areas will be addressed through the construction process, as sufficient material is presently stockpiled for this purpose to ensure. For the purposes of the floodplain, these areas are considered removed by virtue of the berm.

Conclusion:

The grade modifications, including construction of the berm and filling behind the berm, as documented in the above noted "as constructed" plans, have been completed in accordance with the plans approved by the RVCA under permits RV5-4419 and RV5-1718.

Please feel free to contact our office with any questions or comments you may have.

Respectfully,

Terry K. Davidson

Terry Davidson, P.Eng
Director of Engineering and Regulations
Rideau Valley Conservation Authority
613-692-3571 x1107
terry.davidson@rvca.ca

attach: Technical memorandum by Evelyn Liu, M.Asc., P.Eng. Water Resources Engineer, RVCA dated May 29, 2020

STORM SEWER CALCULATION SHEET (RATIONAL METHOD)

Local Roads Return Frequency = 2 years
Collector Roads Return Frequency = 5 years
Manning 0.013 Arterial Roads Return Frequency = 10 years

Ottawa

LOCATION			AREA (Ha) 2 YEAR				5 YEAR				10 YEAR				100 YEAR				FLOW Time of Conc.	Intensity 2 Year	Intensity 5 Year	Intensity 10 Year	Intensity 100 Year	Peak Flow	SEWER DATA DIA. (mm)	DIA. (mm)	TYPE	SLOPE	LENGTH	CAPACITY	VELOCITY	TIME OF FLOW	RATIO
Location	From Node	To Node	AREA (Ha)	R	Indiv. 2.78 AC	Accum. 2.78 AC	AREA (Ha)	R	Indiv. 2.78 AC	Accum. 2.78 AC	AREA (Ha)	R	Indiv. 2.78 AC	Accum. 2.78 AC	AREA (Ha)	R	Indiv. 2.78 AC	Accum. 2.78 AC	(min)	(mm/h)	(mm/h)	(mm/h)	(mm/h)	Q (l/s)	(actual)	(nominal)		(%)	(m)	(l/s)	(m/s)	(min)	Q/Q full
Street 2																																	
	9	27	0.58	0.65	1.05	1.05			0.00	0.00			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	80	450	450	CONC	0.20	103.0	127.5033	0.8017	2.1413	0.631
	27	28	0.11	0.65	0.20	1.25			0.00	0.00			0.00	0.00			0.00	0.00	12.14	69.46	94.10	110.25	161.10	87	450	450	CONC	0.20	12.5	127.5033	0.8017	0.2599	0.679
	28	29	0.19	0.65	0.34	1.59			0.00	0.00			0.00	0.00			0.00	0.00	12.40	68.67	93.02	108.98	159.23	109	450	450	CONC	0.25	50.5	142.5531	0.8963	0.9390	0.766
To Street 1, Pipe 30						1.59				0.00				0.00				0.00	13.34														
	11	20	0.09	0.65	0.16	0.16			0.00	0.00			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	12	300	300	PVC	0.35	10.5	57.2089	0.8093	0.2162	0.218
	20	21	0.40	0.65	0.72	0.89			0.00	0.00			0.00	0.00			0.00	0.00	10.22	75.98	103.06	120.81	176.61	67	375	375	PVC	0.30	67.0	96.0323	0.8695	1.2843	0.701
	21	22	0.39	0.65	0.70	1.59			0.00	0.00			0.00	0.00			0.00	0.00	11.50	71.49	96.88	113.53	165.91	114	450	450	CONC	0.30	67.0	156.1591	0.9819	1.1373	0.728
	22	23	0.36	0.65	0.65	2.24			0.00	0.00			0.00	0.00			0.00	0.00	12.64	67.97	92.06	107.85	157.57	152	525	525	CONC	0.25	61.5	215.0311	0.9933	1.0319	0.708
	23	24	0.47	0.65	0.85	3.09			0.00	0.00			0.00	0.00			0.00	0.00	13.67	65.10	88.12	103.22	150.77	201	600	600	CONC	0.20	82.0	274.5943	0.9712	1.4072	0.733
	24	25	0.24	0.65	0.43	3.52			0.00	0.00			0.00	0.00			0.00	0.00	15.08	61.59	83.31	97.56	142.47	217	600	600	CONC	0.25	41.5	307.0058	1.0858	0.6370	0.707
	25	26	0.22	0.65	0.40	3.92			0.00	0.00			0.00	0.00			0.00	0.00	15.71	60.13	81.32	95.22	139.03	236	600	600	CONC	0.25	39.0	307.0058	1.0858	0.5986	0.768
	26	29	0.32	0.65	0.58	4.50			0.00	0.00			0.00	0.00			0.00	0.00	16.31	58.83	79.54	93.13	135.97	265	675	675	CONC	0.20	63.0	375.9224	1.0505	0.9995	0.704
To Street 1, Pipe 30						4.50				0.00				0.00				0.00	17.31														
	11	12	0.18	0.65	0.33	0.33			0.00	0.00			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	25	300	300	PVC	0.35	46.5	57.2089	0.8093	0.9576	0.437
	12	13	0.18	0.65	0.33	0.65			0.00	0.00			0.00	0.00			0.00	0.00	10.96	73.31	99.39	116.49	170.25	48	300	300	PVC	0.45	16.0	64.8688	0.9177	0.2906	0.735
	13	14	0.40	0.65	0.72	1.37			0.00	0.00			0.00	0.00			0.00	0.00	11.25	72.32	98.03	114.89	167.90	99	450	450	CONC	0.25	70.0	142.5531	0.8963	1.3016	0.697
	14	15	0.35	0.65	0.63	2.01			0.00	0.00			0.00	0.00			0.00	0.00	12.55	68.23	92.41	108.27	158.19	137	525	525	CONC	0.20	64.5	192.3297	0.8885	1.2100	0.712
	15	16	0.34	0.65	0.61	2.62			0.00	0.00			0.00	0.00			0.00	0.00	13.76	64.86	87.79	102.83	150.20	170	600	600	CONC	0.15	60.5	237.8056	0.8411	1.1989	0.715
	16	17	0.40	0.65	0.72	3.34			0.00	0.00			0.00	0.00			0.00	0.00	14.96	61.87	83.69	98.01	143.13	207	600	600	CONC	0.20	68.0	274.5943	0.9712	1.1670	0.753
	17	18	0.13	0.65	0.23	3.58			0.00	0.00			0.00	0.00			0.00	0.00	16.13	59.23	80.09	93.77	136.91	212	600	600	CONC	0.20	16.0	274.5943	0.9712	0.2746	0.772
	18	19	0.21	0.65	0.38	3.96			0.00	0.00			0.00	0.00			0.00	0.00	16.40	58.65	79.29	92.83	135.53	232	675	675	CONC	0.15	54.5	325.5584	0.9098	0.9984	0.713
To Street 3, Pipe 19 - 29						3.96				0.00				0.00				0.00	17.40														
Street 11																																	
	15	6	0.08	0.65	0.14	0.14			0.00	0.00			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	11	300	300	PVC	0.35	59.5	57.2089	0.8093	1.2253	0.194
To Street 3, Pipe 6 - 7						0.14				0.00				0.00				0.00	11.23														
Street 1																																	
Contribution From Street 3, Pipe 19 - 29						9.40				0.00				0.00				0.00	19.35														
Contribution From Street 2, Pipe 26 - 29						4.50				0.00				0.00				0.00	17.31														
Contribution From Street 2, Pipe 29						1.59				0.00				0.00				0.00	13.34														
	29	OGS W4	0.01	0.65	0.02	15.50			0.00	0.00			0.00	0.00			0.00	0.00	19.35	53.10	71.71	83.93	122.47	823	825	825	CONC	0.55	27.0	1064.5476	1.9914	0.2260	0.773
Street 18																																	
	32	38	0.34	0.65	0.61	0.61			0.00	0.00			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	47	300	300	PVC	0.40	86.5	61.1589	0.8652	1.6662	0.772
	38	40	0.36	0.65	0.65	1.26			0.00	0.00			0.00	0.00			0.00	0.00	11.67	70.95	96.15	112.66	164.64	90	450	450	CONC	0.20	86.5	127.5033	0.8017	1.7983	0.704
Contribution From Street 23, Pipe 39 - 40						0.05				0.00				0.00				0.00	10.50														
	40	41	0.23	0.65	0.42	1.73			0.00	0.00			0.00	0.00			0.00	0.00	13.46	65.65	88.87	104.10	152.07	114	525	525	CONC	0.20	61.5	192.3297	0.8885	1.1537	0.592
	41	43	0.23	0.65	0.42	2.15			0.00	0.00			0.00	0.00			0.00	0.00	14.62	62.68	84.81	99.33	145.06	135	525	525	CONC	0.20	61.5	192.3297	0.8885	1.1537	0.701
To Street 14, Pipe 43 - 44						2.15				0.00				0.00				0.00	15.77														
Street 9																																	
Contribution From Street 3, Pipe 48 - 50						7.84				0.00				0.00				0.00	19.39														
Contribution From Street 3, Pipe 49 - 50						1.32				0.00				0.00				0.00	12.51														
	50	51	0.01	0.65	0.02	9.18			0.00	0.00			0.00	0.00			0.00	0.00	19.39	53.03	71.61	83.81	122.29	487	900	900	CONC	0.15	13.0	701.1305	1.1021	0.1966	0.694
			0.03	0.65	0.05	9.23			0.00	0.00			0.00	0.00			0.00	0.00															
	51	52			0.00	9.23	2.91	0.40	3.24	3.24			0.00	0.00			0.00	0.00	19.59	52.70	71.16	83.28	121.52	717	975	975	CONC	0.20	55.0	1002.2295	1.3424	0.6829	0.715
To Street 6, Pipe 52 - 54						9.23				3.24				0.00				0.00	20.27														
Street 5																																	
Contribution From Street 6, Pipe 5200 - 57						0.22				0.00				0.00				0.00	10.70														
Contribution From Street 6, Pipe 8 - 57						0.16				0.00				0.00				0.00	10.26														
	57	58	0.24	0.65	0.43	0.81			0.00	0.00			0.00	0.00			0.00	0.00	10.70	74.22	100.63	117.95	172.40	60	375	375	PVC	0.30	45.5	96.0323	0.8695	0.8722	0.628
	58	59	0.28	0.65	0.51	1.32			0.00	0.00			0.00	0.00			0.00	0.00	11.57	71.25	96.56	113.15	165.36	94	450	450	CONC	0.20	50.0	127.5033	0.8017	1.0395	0.737

Definitions:
Q = 2.78 AIR, where
Q = Peak Flow in Litres per second (L/s)
A = Areas in hectares (ha)
I = Rainfall Intensity (mm/h)
R = Runoff Coefficient

Notes:
1) Ottawa Rainfall-Intensity Curve
2) Min. Velocity = 0.80 m/s

LICENSED PROFESSIONAL ENGINEER
W. LIU
100167932
21-10-15
PROVINCE OF ONTARIO

Designed: A.K.	PROJECT: BARRHAVEN CONSERVANCY WEST		
Checked: W.L.	LOCATION: City of Ottawa		
Dwg. Reference:	File Ref: 20-1226	Date: Oct 2021	Sheet No. SHEET 1 OF 7

1226_STM_Designsheet.xlsx

STORM SEWER CALCULATION SHEET (RATIONAL METHOD)

Local Roads Return Frequency = 2 years
Collector Roads Return Frequency = 5 years
Manning 0.013 Arterial Roads Return Frequency = 10 years

Ottawa

LOCATION			AREA (Ha) 2 YEAR				5 YEAR				10 YEAR				100 YEAR				FLOW						SEWER DATA								
Location	From Node	To Node	AREA (Ha)	R	Indiv. 2.78 AC	Accum. 2.78 AC	AREA (Ha)	R	Indiv. 2.78 AC	Accum. 2.78 AC	AREA (Ha)	R	Indiv. 2.78 AC	Accum. 2.78 AC	AREA (Ha)	R	Indiv. 2.78 AC	Accum. 2.78 AC	Time of Conc. (min)	Intensity 2 Year (mm/h)	Intensity 5 Year (mm/h)	Intensity 10 Year (mm/h)	Intensity 100 Year (mm/h)	Peak Flow Q (l/s)	DIA. (mm) (actual)	DIA. (mm) (nominal)	TYPE	SLOPE (%)	LENGTH (m)	CAPACITY (l/s)	VELOCITY (m/s)	TIME OF FLOW (min)	RATIO Q/Q full
	59	60	0.15	0.65	0.27	1.59			0.00	0.00			0.00	0.00			0.00	0.00	12.61	68.05	92.16	107.97	157.75	108	450	450	CONC	0.25	12.5	142.5531	0.8963	0.2324	0.759
	60	61	0.07	0.65	0.13	1.72			0.00	0.00			0.00	0.00			0.00	0.00	12.84	67.37	91.24	106.89	156.16	116	450	450	CONC	0.30	19.0	156.1591	0.9819	0.3225	0.741
To Street 7, Pipe 61 - 62						1.72				0.00				0.00				0.00	13.17														
Contribution From Street 6, Pipe 52 - 54						9.41				3.24				0.00				0.00	20.68														
Contribution From Street 6, Pipe 53 - 54						0.22				0.00				0.00				0.00	10.57														
	54	55	0.50	0.65	0.90	10.53			0.00	3.24			0.00	0.00			0.00	0.00	20.68	50.96	68.79	80.49	117.43	759	1050	1050	CONC	0.15	90.0	1057.6053	1.2214	1.2281	0.718
	55	56	0.10	0.65	0.18	10.72			0.00	3.24			0.00	0.00			0.00	0.00	21.91	49.15	66.32	77.59	113.18	741	1050	1050	CONC	0.15	11.0	1057.6053	1.2214	0.1501	0.701
	56	61	0.09	0.65	0.16	10.88			0.00	3.24			0.00	0.00			0.00	0.00	22.06	48.94	66.03	77.25	112.68	746	1050	1050	CONC	0.15	25.5	1057.6053	1.2214	0.3480	0.705
To Street 7, Pipe 61 - 62						10.88				3.24				0.00				0.00	22.41														
Street 7																																	
Contribution From Street 5, Pipe 56 - 61						10.88				3.24				0.00				0.00	22.41														
Contribution From Street 5, Pipe 60 - 61						1.72				0.00				0.00				0.00	13.17														
	61	OGS W3	0.01	0.65	0.02	12.61			0.00	3.24			0.00	0.00			0.00	0.00	22.41	48.45	65.37	76.48	111.55	823	1050	1050	CONC	0.15	26.5	1057.6053	1.2214	0.3616	0.778
Street 8																																	
Contribution From Street 10, Pipe 81 - 82						1.66				0.00				0.00				0.00	13.23														
	82	83	0.05	0.65	0.09	1.75			0.00	0.00			0.00	0.00			0.00	0.00	13.23	66.28	89.75	105.13	153.58	116	450	450	CONC	0.30	13.5	156.1591	0.9819	0.2292	0.744
To Street 12, Pipe 83 - 84						1.75				0.00				0.00				0.00	13.46														
Street 21																																	
	64	69	0.34	0.65	0.61	0.61			0.00	0.00			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	47	300	300	PVC	0.40	90.5	61.1589	0.8652	1.7433	0.772
	69	70	0.38	0.65	0.69	1.30			0.00	0.00			0.00	0.00			0.00	0.00	11.74	70.70	95.81	112.27	164.05	92	450	450	CONC	0.20	90.5	127.5033	0.8017	1.8814	0.721
Contribution From Street 23, Pipe 39 - 70						0.04				0.00				0.00				0.00	10.24														
	70	71	0.23	0.65	0.42	1.75			0.00	0.00			0.00	0.00			0.00	0.00	13.62	65.22	88.28	103.41	151.05	114	525	525	CONC	0.20	61.5	192.3297	0.8885	1.1537	0.594
	71	72	0.23	0.65	0.42	2.17			0.00	0.00			0.00	0.00			0.00	0.00	14.78	62.30	84.28	98.70	144.14	135	525	525	CONC	0.20	61.5	192.3297	0.8885	1.1537	0.702
To Street 14, Pipe 72 - 73						2.17				0.00				0.00				0.00	15.93														
Street 23																																	
	39	70	0.02	0.65	0.04	0.04			0.00	0.00			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	3	300	300	PVC	0.95	19.5	94.2522	1.3334	0.2437	0.029
To Street 21, Pipe 70 - 71						0.04				0.00				0.00				0.00	10.24														
	39	40	0.03	0.65	0.05	0.05			0.00	0.00			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	4	300	300	PVC	0.35	24.5	57.2089	0.8093	0.5045	0.073
To Street 18, Pipe 40 - 41						0.05				0.00				0.00				0.00	10.50														
	40	36	0.06	0.65	0.11	0.11			0.00	0.00			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	8	300	300	PVC	0.35	44.5	57.2089	0.8093	0.9164	0.146
To Street 16, Pipe 36 - 37						0.11				0.00				0.00				0.00	10.92														
	70	67	0.06	0.65	0.11	0.11			0.00	0.00			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	8	300	300	PVC	0.35	43.5	57.2089	0.8093	0.8958	0.146
To Street 17, Pipe 67 - 68						0.11				0.00				0.00				0.00	10.90														
Contribution From Street 16, Pipe 89 - 90						1.01				0.70				0.00				0.00	12.90														
	90	67	0.53	0.65	0.96	1.97			0.00	0.70			0.00	0.00			0.00	0.00	12.90	67.23	91.04	106.65	155.81	196	675	675	CONC	0.15	108.5	325.5584	0.9098	1.9877	0.603
To Street 17, Pipe 67 - 68						1.97				0.70				0.00				0.00	14.88														
Street 6																																	
	52	57	0.12	0.65	0.22	0.22			0.00	0.00			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	17	300	300	PVC	0.35	34.0	57.2089	0.8093	0.7002	0.291
To Street 5, Pipe 57 - 58						0.22				0.00				0.00				0.00	10.70														
	53	80	0.09	0.65	0.16	0.16			0.00	0.00			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	12	300	300	PVC	0.70	25.5	80.9057	1.1446	0.3713	0.154
To Street 10, Pipe 80 - 81						0.16				0.00				0.00				0.00	10.37														
	53	54	0.12	0.65	0.22	0.22			0.00	0.00			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	17	300	300	PVC	0.35	27.5	57.2089	0.8093	0.5663	0.291
To Street 5, Pipe 54 - 55						0.22				0.00				0.00				0.00	10.57														
	77	80	0.25	0.65	0.45	0.45			0.00	0.00			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	35	300	300	PVC	0.35	64.0	57.2089	0.8093	1.3179	0.606
To Street 10, Pipe 80 - 81						0.45				0.00				0.00				0.00	11.32														

Definitions:
Q = 2.78 AIR, where
Q = Peak Flow in Litres per second (L/s)
A = Areas in hectares (ha)
I = Rainfall Intensity (mm/h)
R = Runoff Coefficient

Notes:
1) Ottawa Rainfall-Intensity Curve
2) Min. Velocity = 0.80 m/s

LICENSED PROFESSIONAL ENGINEER
W. LIU
100167932
21-10-19
PROVINCE OF ONTARIO

Designed: A.K.	PROJECT: BARRHAVEN CONSERVANCY WEST		
Checked: W.L.	LOCATION: City of Ottawa		
Dwg. Reference:	File Ref: 20-1226	Date: Oct 2021	Sheet No. SHEET 2 OF 7

1226_STM_Designsheet.xlsx

STORM SEWER CALCULATION SHEET (RATIONAL METHOD)

Local Roads Return Frequency = 2 years
Collector Roads Return Frequency = 5 years
Manning 0.013 Arterial Roads Return Frequency = 10 years

Location	LOCATION From Node	LOCATION To Node	2 YEAR AREA (Ha)	2 YEAR R	2 YEAR Indiv. 2.78 AC	2 YEAR Accum. 2.78 AC	5 YEAR AREA (Ha)	5 YEAR R	5 YEAR Indiv. 2.78 AC	5 YEAR Accum. 2.78 AC	10 YEAR AREA (Ha)	10 YEAR R	10 YEAR Indiv. 2.78 AC	10 YEAR Accum. 2.78 AC	100 YEAR AREA (Ha)	100 YEAR R	100 YEAR Indiv. 2.78 AC	100 YEAR Accum. 2.78 AC	FLOW Time of Conc. (min)	Intensity 2 Year (mm/h)	Intensity 5 Year (mm/h)	Intensity 10 Year (mm/h)	Intensity 100 Year (mm/h)	Peak Flow Q (l/s)	SEWER DATA DIA. (mm) (actual)	DIA. (mm) (nominal)	TYPE	SLOPE (%)	LENGTH (m)	CAPACITY (l/s)	VELOCITY (m/s)	TIME OF FLOW (min)	RATIO Q/Q full
	8	57	0.09	0.65	0.16	0.16			0.00	0.00			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	12	300	300	PVC	1.40	25.0	114.4179	1.6187	0.2574	0.109
To Street 5, Pipe 57 - 58						0.16				0.00				0.00				0.00	10.26														
	8	9	0.12	0.65	0.22	0.22			0.00	0.00			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	17	300	300	PVC	0.35	28.5	57.2089	0.8093	0.5869	0.291
	9	10	0.21	0.65	0.38	0.60			0.00	0.00			0.00	0.00			0.00	0.00	10.59	74.62	101.19	118.61	173.37	44	300	300	PVC	0.40	59.0	61.1589	0.8652	1.1365	0.728
To Street 3, Pipe 10 - 19						0.60				0.00				0.00				0.00	11.72														
Contribution From Street 17, Pipe 75 - 76						9.92				1.19				0.00				0.00	18.71														
	76	77	0.20	0.65	0.36	10.28			0.00	1.19			0.00	0.00			0.00	0.00	18.71	54.21	73.22	85.70	125.07	644	975	975	CONC	0.15	57.0	867.9562	1.1625	0.8172	0.742
To Street 10, Pipe 77 - 78						10.28				1.19				0.00				0.00	19.52														
Contribution From Street 9, Pipe 51 - 52						9.23				3.24				0.00				0.00	20.27														
	52	54	0.10	0.65	0.18	9.41			0.00	3.24			0.00	0.00			0.00	0.00	20.27	51.60	69.66	81.51	118.93	711	1050	1050	CONC	0.15	30.0	1057.6053	1.2214	0.4094	0.672
To Street 5, Pipe 54 - 55						9.41				3.24				0.00				0.00	20.68														
Street 10																																	
Contribution From Street 6, Pipe 53 - 80						0.16				0.00				0.00				0.00	10.37														
Contribution From Street 6, Pipe 7700 - 80						0.45				0.00				0.00				0.00	11.32														
	80	81	0.43	0.65	0.78	1.39			0.00	0.00			0.00	0.00			0.00	0.00	11.32	72.09	97.71	114.51	167.35	100	450	450	CONC	0.20	79.5	127.5033	0.8017	1.6528	0.787
	81	82	0.15	0.65	0.27	1.66			0.00	0.00			0.00	0.00			0.00	0.00	12.97	67.01	90.74	106.31	155.30	111	450	450	CONC	0.25	14.0	142.5531	0.8963	0.2603	0.781
To Street 8, Pipe 82 - 83						1.66				0.00				0.00				0.00	13.23														
Contribution From Street 6, Pipe 76 - 77						10.28				1.19				0.00				0.00	19.52														
	77	78	0.43	0.65	0.78	11.06			0.00	1.19			0.00	0.00			0.00	0.00	19.52	52.81	71.31	83.46	121.78	669	975	975	CONC	0.15	78.0	867.9562	1.1625	1.1183	0.770
	78	79	0.12	0.65	0.22	11.28			0.00	1.19			0.00	0.00			0.00	0.00	20.64	51.02	68.87	80.59	117.57	657	975	975	CONC	0.15	12.5	867.9562	1.1625	0.1792	0.757
	79	83	0.11	0.65	0.20	11.47			0.00	1.19			0.00	0.00			0.00	0.00	20.82	50.75	68.50	80.15	116.93	664	975	975	CONC	0.15	31.0	867.9562	1.1625	0.4444	0.765
To Street 12, Pipe 83 - 84						11.47				1.19				0.00				0.00	21.27														
Street 12																																	
Contribution From Street 10, Pipe 79 - 83						11.47				1.19				0.00				0.00	21.27														
Contribution From Street 8, Pipe 82 - 83						1.75				0.00				0.00				0.00	13.46														
	83	OGS W2	0.01	0.65	0.02	13.25			0.00	1.19			0.00	0.00			0.00	0.00	21.27	50.08	67.59	79.08	115.36	744	975	975	CONC	0.20	26.5	1002.2295	1.3424	0.3290	0.742
Street 26																																	
Contribution From Street 3, Pipe 10200 - 111						0.00				0.02				0.00				0.00	10.28														
	111	112	0.15	0.65	0.27	0.27			0.00	0.02			0.00	0.00			0.00	0.00	10.28	75.75	102.75	120.44	176.06	22	300	300	PVC	0.35	55.0	57.2089	0.8093	1.1326	0.391
	112	115	0.15	0.65	0.27	0.54			0.00	0.02			0.00	0.00			0.00	0.00	11.41	71.78	97.29	114.01	166.62	41	375	375	PVC	0.30	57.0	96.0323	0.8695	1.0926	0.424
To Street 22, Pipe 115 - 116						0.54				0.02				0.00				0.00	12.50														
Street 24																																	
Contribution From Street 3, Pipe 11100 - 110						0.00				0.34				0.00				0.00	10.90														
	110	114	0.39	0.65	0.70	0.70			0.00	0.34			0.00	0.00			0.00	0.00	10.90	73.53	99.69	116.84	170.76	86	450	450	CONC	0.20	99.5	127.5033	0.8017	2.0685	0.675
To Street 22, Pipe 114 - 115						0.70				0.34				0.00				0.00	12.96														
Street 27																																	
	112	105	0.50	0.65	0.90	0.90			0.00	0.00			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	69	450	450	CONC	0.20	98.5	127.5033	0.8017	2.0478	0.544
To Street 22, Pipe 105 - 106						0.90				0.00				0.00				0.00	12.05														
Street 25																																	
	91	68	0.41	0.65	0.74	0.74			0.00	0.00			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	57	375	375	PVC	0.30	79.5	96.0323	0.8695	1.5239	0.593
To Street 17, Pipe 68 - 73						0.74				0.00				0.00				0.00	11.52														
	91	92	0.12	0.65	0.22	0.22			0.00	0.00			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	17	300	300	PVC	0.35	30.5	57.2089	0.8093	0.6281	0.291
To Street 16, Pipe 92 - 94						0.22				0.00				0.00				0.00	10.63														
Street 16																																	
	31	64	0.06	0.65	0.11	0.11			0.00	0.00			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	8	300	300	PVC	1.35	9.0	112.3561	1.5895	0.0944	0.074
	64	65	0.19	0.65	0.34	0.45			0.00	0.00			0.00	0.00			0.00	0.00	10.09	76.44	103.70	121.56	177.70	35	300	300	PVC	0.35	50.0	57.2089	0.8093	1.0296	0.604
To Street 17, Pipe 65 - 66						0.45				0.00				0.00				0.00	11.12														

Definitions:
Q = 2.78 AIR, where
Q = Peak Flow in Litres per second (L/s)
A = Areas in hectares (ha)
I = Rainfall Intensity (mm/h)
R = Runoff Coefficient

Notes:
1) Ottawa Rainfall-Intensity Curve
2) Min. Velocity = 0.80 m/s

LICENSED PROFESSIONAL ENGINEER
W. LIU
100167932
21-10-15
PROVINCE OF ONTARIO

Designed:	PROJECT:		
A.K.	BARRHAVEN CONSERVANCY WEST		
Checked:	LOCATION:		
W.L.	City of Ottawa		
Dwg. Reference:	File Ref: 20-1226	Date: Oct 2021	Sheet No. SHEET 3 OF 7

1226_STM_Designsheet.xlsx

STORM SEWER CALCULATION SHEET (RATIONAL METHOD)

Local Roads Return Frequency = 2 years
Collector Roads Return Frequency = 5 years
Manning 0.013 Arterial Roads Return Frequency = 10 years

Ottawa

LOCATION			AREA (Ha) 2 YEAR				5 YEAR				10 YEAR				100 YEAR				FLOW						SEWER DATA								
Location	From Node	To Node	AREA (Ha)	R	Indiv. 2.78 AC	Accum. 2.78 AC	AREA (Ha)	R	Indiv. 2.78 AC	Accum. 2.78 AC	AREA (Ha)	R	Indiv. 2.78 AC	Accum. 2.78 AC	AREA (Ha)	R	Indiv. 2.78 AC	Accum. 2.78 AC	Time of Conc. (min)	Intensity 2 Year (mm/h)	Intensity 5 Year (mm/h)	Intensity 10 Year (mm/h)	Intensity 100 Year (mm/h)	Peak Flow Q (l/s)	DIA. (mm) (actual)	DIA. (mm) (nominal)	TYPE	SLOPE (%)	LENGTH (m)	CAPACITY (l/s)	VELOCITY (m/s)	TIME OF FLOW (min)	RATIO Q/Q full
	85	63	0.04	0.65	0.07	0.07			0.00	0.00			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	6	300	300	PVC	0.35	10.5	57.2089	0.8093	0.2162	0.097
	63	65	0.24	0.65	0.43	0.51			0.00	0.00			0.00	0.00			0.00	0.00	10.22	75.98	103.06	120.81	176.61	38	300	300	PVC	0.35	67.0	57.2089	0.8093	1.3797	0.672
To Street 17, Pipe 65 - 66						0.51				0.00				0.00				0.00	11.60														
	90	92	0.22	0.65	0.40	0.40			0.00	0.00			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	31	300	300	PVC	0.35	58.5	57.2089	0.8093	1.2047	0.534
Contribution From Street 25, Pipe 91 - 92						0.22				0.00				0.00				0.00	10.63														
	92	94	0.21	0.65	0.38	0.99			0.00	0.00			0.00	0.00			0.00	0.00	11.20	72.47	98.23	115.12	168.25	72	375	375	PVC	0.30	65.0	96.0323	0.8695	1.2459	0.750
To Street 14, Pipe 94 - 101						0.99				0.00				0.00				0.00	12.45														
	85	86	0.20	0.65	0.36	0.36			0.00	0.00			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	28	300	300	PVC	0.35	50.0	57.2089	0.8093	1.0296	0.485
	86	87	0.12	0.65	0.22	0.58			0.00	0.00			0.00	0.00			0.00	0.00	11.03	73.07	99.05	116.09	169.66	42	300	300	PVC	0.35	9.5	57.2089	0.8093	0.1956	0.739
			0.11	0.65	0.20	0.78			0.00	0.00			0.00	0.00			0.00	0.00															
	87	88			0.00	0.78	0.63	0.40	0.70	0.70			0.00	0.00			0.00	0.00	11.23	72.40	98.14	115.01	168.08	125	450	450	CONC	0.30	27.0	156.1591	0.9819	0.4583	0.801
	88	89	0.02	0.65	0.04	0.81			0.00	0.70			0.00	0.00			0.00	0.00	11.68	70.89	96.07	112.57	164.51	125	450	450	CONC	0.30	13.0	156.1591	0.9819	0.2207	0.800
	89	90	0.11	0.65	0.20	1.01			0.00	0.70			0.00	0.00			0.00	0.00	11.90	70.19	95.11	111.44	162.84	138	600	600	CONC	0.15	50.0	237.8056	0.8411	0.9908	0.579
To Street 23, Pipe 90 - 67						1.01				0.70				0.00				0.00	12.90														
	31	32	0.16	0.65	0.29	0.29			0.00	0.00			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	22	300	300	PVC	0.35	37.0	57.2089	0.8093	0.7619	0.388
	32	33	0.15	0.65	0.27	0.56			0.00	0.00			0.00	0.00			0.00	0.00	10.76	74.00	100.33	117.60	171.88	41	300	300	PVC	0.35	40.0	57.2089	0.8093	0.8237	0.725
	33	34	0.03	0.65	0.05	0.61			0.00	0.00			0.00	0.00			0.00	0.00	11.59	71.21	96.50	113.08	165.26	44	300	300	PVC	0.35	10.5	57.2089	0.8093	0.2162	0.765
	34	35	0.32	0.65	0.58	1.19			0.00	0.00			0.00	0.00			0.00	0.00	11.80	70.52	95.55	111.96	163.61	84	450	450	CONC	0.20	77.0	127.5033	0.8017	1.6008	0.660
	35	36	0.39	0.65	0.70	1.90			0.00	0.00			0.00	0.00			0.00	0.00	13.40	65.81	89.10	104.37	152.46	125	600	600	CONC	0.15	77.0	237.8056	0.8411	1.5258	0.525
Contribution From Street 23, Pipe 4000 - 36						0.11				0.00				0.00				0.00	10.92														
	36	37	0.30	0.65	0.54	2.55			0.00	0.00			0.00	0.00			0.00	0.00	14.93	61.94	83.79	98.12	143.29	158	600	600	CONC	0.15	61.5	237.8056	0.8411	1.2187	0.664
	37	44	0.28	0.65	0.51	3.05			0.00	0.00			0.00	0.00			0.00	0.00	16.15	59.19	80.03	93.70	136.80	181	600	600	CONC	0.15	61.5	237.8056	0.8411	1.2187	0.760
To Street 14, Pipe 44 - 47						3.05				0.00				0.00				0.00	17.37														
Street 14																																	
	93	73	0.44	0.65	0.80	0.80			0.00	0.00			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	61	375	375	PVC	0.30	81.5	96.0323	0.8695	1.5622	0.636
To Street 17, Pipe 73 - 75						0.80				0.00				0.00				0.00	11.56														
	93	94	0.15	0.65	0.27	0.27			0.00	0.00			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	21	300	300	PVC	1.20	28.5	105.9304	1.4986	0.3170	0.197
Contribution From Street 16, Pipe 92 - 94						0.99				0.00				0.00				0.00	12.45														
	94	101	0.15	0.65	0.27	1.54			0.00	0.00			0.00	0.00			0.00	0.00	12.45	68.52	92.81	108.74	158.88	105	450	450	CONC	0.25	44.0	142.5531	0.8963	0.8182	0.738
To Street 28, Pipe 101 - 102						1.54				0.00				0.00				0.00	13.27														
	42	72	0.09	0.65	0.16	0.16			0.00	0.00			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	12	300	300	PVC	0.85	22.0	89.1537	1.2613	0.2907	0.140
Contribution From Street 21, Pipe 71 - 72						2.17				0.00				0.00				0.00	15.93														
	72	73	0.16	0.65	0.29	2.62			0.00	0.00			0.00	0.00			0.00	0.00	15.93	59.65	80.66	94.45	137.90	156	600	600	CONC	0.15	45.0	237.8056	0.8411	0.8917	0.657
To Street 17, Pipe 73 - 75						2.62				0.00				0.00				0.00	16.82														
	95	96	0.19	0.65	0.34	0.34			0.00	0.00			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	26	300	300	PVC	0.35	44.5	57.2089	0.8093	0.9164	0.461
	96	97	0.12	0.65	0.22	0.56			0.00	0.00			0.00	0.00			0.00	0.00	10.92	73.46	99.59	116.72	170.59	41	375	375	PVC	0.30	13.0	96.0323	0.8695	0.2492	0.428
	97	98	0.40	0.65	0.72	1.28			0.00	0.00			0.00	0.00			0.00	0.00	11.17	72.60	98.41	115.34	168.56	93	450	450	CONC	0.20	64.0	127.5033	0.8017	1.3305	0.731
	98	99	0.40	0.65	0.72	2.01			0.00	0.00			0.00	0.00			0.00	0.00	12.50	68.39	92.63	108.53	158.56	137	525	525	CONC	0.20	64.0	192.3297	0.8885	1.2006	0.713
	99	100	0.13	0.65	0.23	2.24			0.00	0.00			0.00	0.00			0.00	0.00	13.70	65.03	88.02	103.10	150.60	146	525	525	CONC	0.20	13.0	192.3297	0.8885	0.2439	0.758
	100	101	0.03	0.65	0.05	2.29			0.00	0.00			0.00	0.00			0.00	0.00	13.94	64.39	87.14	102.07	149.09	148	525	525	CONC	0.20	8.0	192.3297	0.8885	0.1501	0.768
To Street 28, Pipe 101 - 102						2.29				0.00				0.00				0.00	14.09														
	42	43	0.08	0.65	0.14	0.14			0.00	0.00			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	11	300	300	PVC	0.35	22.0	57.2089	0.8093	0.4530	0.194
Contribution From Street 18, Pipe 41 - 43						2.15				0.00				0.00				0.00	15.77														
	43	44	0.17	0.65	0.31	2.60			0.00	0.00			0.00	0.00			0.00	0.00	15.77	60.00	81.14	95.01	138.73	156	600	600	CONC	0.15	45.0	237.8056	0.8411	0.8917	0.657
Contribution From Street 16, Pipe 37 - 44						3.05				0.00				0.00				0.00	17.37														
	44	47	0.21	0.65	0.38	6.04			0.00	0.00			0.00	0.00			0.00	0.00	17.37	56.69	76.62	89.69	130.92	342	750	750	CONC	0.15	62.0	431.1703	0.9760	1.0588	0.794
To Street 3, Pipe 47 - 48						6.04				0.00				0.00				0.00	18.42														

Definitions:
Q = 2.78 AIR, where
Q = Peak Flow in Litres per second (L/s)
A = Areas in hectares (ha)
I = Rainfall Intensity (mm/h)
R = Runoff Coefficient

Notes:
1) Ottawa Rainfall-Intensity Curve
2) Min. Velocity = 0.80 m/s

LICENSED PROFESSIONAL ENGINEER
W. LIU
100167932
21-10-19
PROVINCE OF ONTARIO

Designed:	PROJECT:	
A.K.	BARRHAVEN CONSERVANCY WEST	
Checked:	LOCATION:	
W.L.	City of Ottawa	
Dwg. Reference:	File Ref: 20-1226	Date: Oct 2021 / Sheet No. SHEET 4 OF 7

1226_STM_Designsheet.xlsx

STORM SEWER CALCULATION SHEET (RATIONAL METHOD)

Local Roads Return Frequency = 2 years
Collector Roads Return Frequency = 5 years
Manning 0.013 Arterial Roads Return Frequency = 10 years

LOCATION			AREA (Ha) 2 YEAR				5 YEAR				10 YEAR				100 YEAR				FLOW						SEWER DATA								
Location	From Node	To Node	AREA (Ha)	R	Indiv. 2.78 AC	Accum. 2.78 AC	AREA (Ha)	R	Indiv. 2.78 AC	Accum. 2.78 AC	AREA (Ha)	R	Indiv. 2.78 AC	Accum. 2.78 AC	AREA (Ha)	R	Indiv. 2.78 AC	Accum. 2.78 AC	Time of Conc. (min)	Intensity 2 Year (mm/h)	Intensity 5 Year (mm/h)	Intensity 10 Year (mm/h)	Intensity 100 Year (mm/h)	Peak Flow Q (l/s)	DIA. (mm) (actual)	DIA. (mm) (nominal)	TYPE	SLOPE (%)	LENGTH (m)	CAPACITY (l/s)	VELOCITY (m/s)	TIME OF FLOW (min)	RATIO Q/Q full
Street 28																																	
Contribution From Street 14, Pipe 100 - 101						2.29				0.00				0.00				0.00	14.09														
Contribution From Street 14, Pipe 94 - 101						1.54				0.00				0.00				0.00	13.27														
	101	102	0.05	0.65	0.09	3.92			0.00	0.00			0.00	0.00			0.00	0.00	14.09	64.00	86.62	101.45	148.17	251	675	675	CONC	0.15	62.0	325.5584	0.9098	1.1358	0.771
To Street 3, Pipe 102 - 104						3.92				0.00				0.00				0.00	15.23														
Street 22																																	
	113	114	0.12	0.65	0.22	0.22			0.00	0.00			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	17	450	450	CONC	0.20	45.0	127.5033	0.8017	0.9355	0.131
Contribution From Street 24, Pipe 110 - 114						0.70				0.34				0.00				0.00	12.96														
	114	115	0.17	0.65	0.31	1.23			0.00	0.34			0.00	0.00			0.00	0.00	12.96	67.03	90.77	106.34	155.35	114	525	525	CONC	0.20	45.0	192.3297	0.8885	0.8442	0.590
Contribution From Street 26, Pipe 112 - 115						0.54				0.02				0.00				0.00	12.50														
	115	116	0.49	0.65	0.89	2.66			0.00	0.36			0.00	0.00			0.00	0.00	13.81	64.73	87.62	102.63	149.90	204	600	600	CONC	0.20	88.0	274.5943	0.9712	1.5102	0.741
To Street 29, Pipe 116 - 122						2.66				0.36				0.00				0.00	15.32														
Contribution From Street 3, Pipe 102 - 104						3.92				0.89				0.00				0.00	16.65														
Contribution From Street 3, Pipe 103 - 104						0.00				0.23				0.00				0.00	10.32														
	104	105	0.18	0.65	0.33	4.25			0.00	1.12			0.00	0.00			0.00	0.00	16.65	58.12	78.57	91.99	134.29	335	825	825	CONC	0.15	55.0	555.9418	1.0400	0.8814	0.602
Contribution From Street 27, Pipe 11200 - 105						0.90				0.00				0.00				0.00	12.05														
	105	106	0.21	0.65	0.38	5.53			0.00	1.12			0.00	0.00			0.00	0.00	17.53	56.37	76.17	89.17	130.16	397	825	825	CONC	0.15	51.5	555.9418	1.0400	0.8253	0.714
	106	107	0.13	0.65	0.23	5.76			0.00	1.12			0.00	0.00			0.00	0.00	18.36	54.83	74.07	86.70	126.53	399	825	825	CONC	0.15	9.5	555.9418	1.0400	0.1522	0.718
	107	116	0.03	0.65	0.05	5.82			0.00	1.12			0.00	0.00			0.00	0.00	18.51	54.56	73.70	86.26	125.89	400	825	825	CONC	0.15	6.0	555.9418	1.0400	0.0962	0.720
To Street 29, Pipe 116 - 122						5.82				1.12				0.00				0.00	18.61														
Street 29																																	
Contribution From Street 22, Pipe 107 - 116						5.82				1.12				0.00				0.00	18.61														
Contribution From Street 22, Pipe 115 - 116						2.66				0.36				0.00				0.00	15.32														
	116	122	0.05	0.65	0.09	8.57			0.00	1.48			0.00	0.00			0.00	0.00	18.61	54.38	73.46	85.99	125.49	575	900	900	CONC	0.16	67.5	724.1245	1.1383	0.9884	0.794
To Street 17, Pipe 122 - 124						8.57				1.48				0.00				0.00	19.60														
Street 3																																	
	10200	111			0.00	0.00	0.01	0.65	0.02	0.02			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	2	300	300	PVC	0.35	13.5	57.2089	0.8093	0.2780	0.033
To Street 26, Pipe 1 112						0.00				0.02				0.00				0.00	10.28														
	103	104			0.00	0.00	0.13	0.65	0.23	0.23			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	24	300	300	PVC	1.45	32.0	116.4431	1.6473	0.3238	0.210
To Street 22, Pipe 104 - 105						0.00				0.23				0.00				0.00	10.32														
	108	75			0.00	0.00	0.06	0.65	0.11	0.11			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	11	300	300	PVC	0.35	21.5	57.2089	0.8093	0.4427	0.197
To Street 17, Pipe 75 - 76						0.00				0.11				0.00				0.00	10.44														
	108	109			0.00	0.00	0.11	0.65	0.20	0.20			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	21	300	300	PVC	0.35	26.5	57.2089	0.8093	0.5457	0.362
To Street 20, Pipe 109 - 113						0.00				0.20				0.00				0.00	10.55														
	110	109			0.00	0.00	0.17	0.65	0.31	0.31			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	32	375	375	PVC	0.30	43.5	96.0323	0.8695	0.8338	0.333
To Street 20, Pipe 109 - 113						0.00				0.31				0.00				0.00	10.83														
	111	110			0.00	0.00	0.19	0.65	0.34	0.34			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	36	300	300	PVC	0.35	43.5	57.2089	0.8093	0.8958	0.625
To Street 24, Pipe 110 - 114						0.00				0.34				0.00				0.00	10.90														
	74	75	0.44	0.65	0.80	0.80			0.00	0.00			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	61	375	375	PVC	0.30	78.0	96.0323	0.8695	1.4951	0.636
To Street 17, Pipe 75 - 76						0.80				0.00				0.00				0.00	11.50														
	74	49	0.67	0.65	1.21	1.21			0.00	0.00			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	93	450	450	CONC	0.20	107.5	127.5033	0.8017	2.2349	0.729
	49	50	0.06	0.65	0.11	1.32			0.00	0.00			0.00	0.00			0.00	0.00	12.23	69.17	93.70	109.79	160.42	91	450	450	CONC	0.20	13.0	127.5033	0.8017	0.2703	0.716
To Street 9, Pipe 50 - 51						1.32				0.00				0.00				0.00	12.51														
Contribution From Street 28, Pipe 101 - 102						3.92				0.00				0.00				0.00	15.23														
	102	104			0.00	3.92	0.49	0.65	0.89	0.89			0.00	0.00			0.00	0.00	15.23	61.24	82.83	97.00	141.64	313	750	750	CONC	0.15	83.5	431.1703	0.9760	1.4259	0.727
To Street 22, Pipe 104 - 105						3.92				0.89				0.00				0.00	16.65														

Definitions:
Q = 2.78 AIR, where
Q = Peak Flow in Litres per second (L/s)
A = Areas in hectares (ha)
I = Rainfall Intensity (mm/h)
R = Runoff Coefficient

Notes:
1) Ottawa Rainfall-Intensity Curve
2) Min. Velocity = 0.80 m/s

LICENSED PROFESSIONAL ENGINEER
W. LIU
100167932
21-10-15
PROVINCE OF ONTARIO

Designed: A.K.	PROJECT: BARRHAVEN CONSERVANCY WEST		
Checked: W.L.	LOCATION: City of Ottawa		
Dwg. Reference:	File Ref: 20-1226	Date: Oct 2021	Sheet No. SHEET 5 OF 7

STORM SEWER CALCULATION SHEET (RATIONAL METHOD)

Local Roads Return Frequency = 2 years
Collector Roads Return Frequency = 5 years
Manning 0.013 Arterial Roads Return Frequency = 10 years

LOCATION			AREA (Ha)																FLOW						SEWER DATA								
			2 YEAR				5 YEAR				10 YEAR				100 YEAR				Time of Conc.	Intensity 2 Year	Intensity 5 Year	Intensity 10 Year	Intensity 100 Year	Peak Flow	DIA. (mm)	DIA. (mm)	TYPE	SLOPE	LENGTH	CAPACITY	VELOCITY	TIME OF FLOW	RATIO
Location	From Node	To Node	AREA (Ha)	R	Indiv. 2.78 AC	Accum. 2.78 AC	AREA (Ha)	R	Indiv. 2.78 AC	Accum. 2.78 AC	AREA (Ha)	R	Indiv. 2.78 AC	Accum. 2.78 AC	AREA (Ha)	R	Indiv. 2.78 AC	Accum. 2.78 AC	(min)	(mm/h)	(mm/h)	(mm/h)	(mm/h)	Q (l/s)	(actual)	(nominal)		(%)	(m)	(l/s)	(m/s)	(min)	Q/Q full
	1	2	0.30	0.65	0.54	0.54			0.00	0.00			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	42	300	300	PVC	0.35	73.0	57.2089	0.8093	1.5033	0.728
	2	3	0.26	0.65	0.47	1.01			0.00	0.00			0.00	0.00			0.00	0.00	11.50	71.48	96.87	113.52	165.89	72	375	375	PVC	0.30	67.0	96.0323	0.8695	1.2843	0.753
	3	4	0.12	0.65	0.22	1.23			0.00	0.00			0.00	0.00			0.00	0.00	12.79	67.54	91.46	107.15	156.54	83	375	375	PVC	0.40	10.0	110.8885	1.0040	0.1660	0.748
	4	5	0.44	0.65	0.80	2.02			0.00	0.00			0.00	0.00			0.00	0.00	12.95	67.06	90.81	106.38	155.42	136	525	525	CONC	0.20	73.0	192.3297	0.8885	1.3694	0.706
	5	6	0.46	0.65	0.83	2.86			0.00	0.00			0.00	0.00			0.00	0.00	14.32	63.41	85.81	100.50	146.78	181	600	600	CONC	0.15	82.0	237.8056	0.8411	1.6249	0.761
Contribution From Street 11, Pipe 1500 - 6						0.14				0.00				0.00				0.00	11.23														
	6	7	0.30	0.65	0.54	3.54			0.00	0.00			0.00	0.00			0.00	0.00	15.95	59.62	80.61	94.39	137.82	211	600	600	CONC	0.20	54.0	274.5943	0.9712	0.9267	0.769
	7	10	0.25	0.65	0.45	3.99			0.00	0.00			0.00	0.00			0.00	0.00	16.87	57.67	77.95	91.26	133.22	230	675	675	CONC	0.15	54.5	325.5584	0.9098	0.9984	0.707
Contribution From Street 6, Pipe 9 - 10						0.60				0.00				0.00				0.00	11.72														
	10	19	0.26	0.65	0.47	5.06			0.00	0.00			0.00	0.00			0.00	0.00	17.87	55.72	75.29	88.14	128.64	282	675	675	CONC	0.20	48.0	375.9224	1.0505	0.7615	0.750
Contribution From Street 2, Pipe 18 - 19						3.96				0.00				0.00				0.00	17.40														
	19	29	0.21	0.65	0.38	9.40			0.00	0.00			0.00	0.00			0.00	0.00	18.63	54.34	73.40	85.91	125.37	511	750	750	CONC	0.35	64.0	658.6236	1.4908	0.7155	0.775
To Street 1, Pipe 30						9.40				0.00				0.00				0.00	19.35														
	1	45	0.22	0.65	0.40	0.40			0.00	0.00			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	31	300	300	PVC	0.35	13.0	57.2089	0.8093	0.2677	0.534
	45	46	0.36	0.65	0.65	1.05			0.00	0.00			0.00	0.00			0.00	0.00	10.27	75.79	102.80	120.50	176.15	79	450	450	CONC	0.20	88.0	127.5033	0.8017	1.8295	0.623
	46	47	0.32	0.65	0.58	1.63			0.00	0.00			0.00	0.00			0.00	0.00	12.10	69.59	94.28	110.47	161.42	113	525	525	CONC	0.20	88.0	192.3297	0.8885	1.6508	0.588
Contribution From Street 14, Pipe 44 - 47						6.04				0.00				0.00				0.00	18.42														
	47	48	0.08	0.65	0.14	7.81			0.00	0.00			0.00	0.00			0.00	0.00	18.42	54.71	73.91	86.51	126.25	427	825	825	CONC	0.15	48.0	555.9418	1.0400	0.7692	0.768
	48	50	0.02	0.65	0.04	7.84			0.00	0.00			0.00	0.00			0.00	0.00	19.19	53.37	72.07	84.35	123.09	419	825	825	CONC	0.15	12.5	555.9418	1.0400	0.2003	0.753
To Street 9, Pipe 50 - 51						7.84				0.00				0.00				0.00	19.39														
Street 20																																	
Contribution From Street 3, Pipe 108 - 109						0.00				0.20				0.00				0.00	10.55														
Contribution From Street 3, Pipe 11000 - 109						0.00				0.31				0.00				0.00	10.83														
	109	113	0.36	0.65	0.65	0.65			0.00	0.51			0.00	0.00			0.00	0.00	10.83	73.75	99.99	117.19	171.28	99	450	450	CONC	0.20	88.5	127.5033	0.8017	1.8399	0.773
	113	120	0.17	0.65	0.31	0.96			0.00	0.51			0.00	0.00			0.00	0.00	12.67	67.87	91.91	107.68	157.32	112	600	600	CONC	0.15	68.5	237.8056	0.8411	1.3574	0.469
To Street 17, Pipe 120 - 121						0.96				0.51				0.00				0.00	14.03														
Street 17																																	
	123	124			0.00	0.00	0.12	0.65	0.22	0.22			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	23	300	300	PVC	1.25	27.0	108.1147	1.5295	0.2942	0.209
To Street 30, Pipe 124 - 125						0.00				0.22				0.00				0.00	10.29														
Contribution From Street 16, Pipe 63 - 65						0.51				0.00				0.00				0.00	11.60														
Contribution From Street 16, Pipe 64 - 65						0.45				0.00				0.00				0.00	11.12														
	65	66	0.28	0.65	0.51	1.46			0.00	0.00			0.00	0.00			0.00	0.00	11.60	71.18	96.46	113.03	165.18	104	450	450	CONC	0.25	68.5	142.5531	0.8963	1.2737	0.731
	66	67	0.38	0.65	0.69	2.15			0.00	0.00			0.00	0.00			0.00	0.00	12.87	67.30	91.14	106.77	155.98	145	525	525	CONC	0.20	88.0	192.3297	0.8885	1.6508	0.752
Contribution From Street 23, Pipe 7000 - 67						0.11				0.00				0.00				0.00	10.90														
Contribution From Street 23, Pipe 90 - 67						1.97				0.70				0.00				0.00	14.88														
	67	68	0.15	0.65	0.27	4.50			0.00	0.70			0.00	0.00			0.00	0.00	14.88	62.05	83.94	98.30	143.55	338	750	750	CONC	0.15	58.5	431.1703	0.9760	0.9990	0.784
Contribution From Street 25, Pipe 91 - 68						0.74				0.00				0.00				0.00	11.52														
	68	73	0.16	0.65	0.29	5.53			0.00	0.70			0.00	0.00			0.00	0.00	15.88	59.76	80.81	94.62	138.16	387	825	825	CONC	0.15	64.5	555.9418	1.0400	1.0337	0.696
Contribution From Street 14, Pipe 72 - 73						2.62				0.00				0.00				0.00	16.82														
Contribution From Street 14, Pipe 93 - 73						0.80				0.00				0.00				0.00	11.56														
	73	75	0.10	0.65	0.18	9.13			0.00	0.70			0.00	0.00			0.00	0.00	16.92	57.59	77.84	91.13	133.03	580	975	975	CONC	0.15	63.0	867.9562	1.1625	0.9032	0.668
Contribution From Street 3, Pipe 108 - 75						0.00				0.11				0.00				0.00	10.44														
Contribution From Street 3, Pipe 74 - 75						0.80				0.00				0.00				0.00	11.50														
	75	76			0.00	9.92	0.21	0.65	0.38	1.19			0.00	0.00			0.00	0.00	17.82	55.83	75.43	88.30	128.88	643	975	975	CONC	0.15	62.0	867.9562	1.1625	0.8889	0.741
To Street 6, Pipe 76 - 77						9.92				1.19				0.00				0.00	18.71														
	117	118			0.00	0.00	0.45	0.65	0.81	0.81			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	85	450	450	CONC	0.20	73.5	127.5033	0.8017	1.5280	0.664
	118	119			0.00	0.00	0.13	0.65	0.23	1.05			0.00	0.00			0.00	0.00	11.53	71.40	96.76	113.39	165.70	101	525	525	CONC	0.20	10.5	192.3297	0.8885	0.1970	0.527
	119	120			0.00	0.00	0.17	0.65	0.31	1.36			0.00	0.00			0.00	0.00	11.72	70.76	95.89	112.36	164.19	130	600	600	CONC	0.15	39.5	237.8056	0.8411	0.7827	0.546
Contribution From Street 20, Pipe 113 - 120						0.96				0.51				0.00				0.00	14.03														
	120	121			0.00	0.96	0.53	0.65	0.96	2.82			0.00	0.00			0.00	0.00	14.03	64.15	86.82	101.69	148.53	306	750	750	CONC	0.15	84.0	431.1703	0.9760	1.4345	0.710
	121	122			0.00	0.96	0.71	0.65	1.28	4.10			0.00	0.00			0.00	0.00	15.47	60.69	82.08	96.12	140.35	395	825	825	CONC	0.15	98.5	555.9418	1.0400	1.5785	0.710

Definitions:
Q = 2.78 AIR, where
Q = Peak Flow in Litres per second (L/s)
A = Areas in hectares (ha)
I = Rainfall Intensity (mm/h)
R = Runoff Coefficient

Notes:
1) Ottawa Rainfall-Intensity Curve
2) Min. Velocity = 0.80 m/s

LICENSED PROFESSIONAL ENGINEER
W. LIU
100167932
21-10-15
PROVINCE OF ONTARIO

Designed:	PROJECT:		
A.K.	BARRHAVEN CONSERVANCY WEST		
Checked:	LOCATION:		
W.L.	City of Ottawa		
Dwg. Reference:	File Ref: 20-1226	Date: Oct 2021	Sheet No. SHEET 6 OF 7

1226_STM_Designsheet.xlsx

STORM SEWER CALCULATION SHEET (RATIONAL METHOD)

Local Roads Return Frequency = 2 years
Collector Roads Return Frequency = 5 years
Manning 0.013 Arterial Roads Return Frequency = 10 years

Ottawa

LOCATION			AREA (Ha) 2 YEAR				5 YEAR				10 YEAR				100 YEAR				FLOW						SEWER DATA								
Location	From Node	To Node	AREA (Ha)	R	Indiv. 2.78 AC	Accum. 2.78 AC	AREA (Ha)	R	Indiv. 2.78 AC	Accum. 2.78 AC	AREA (Ha)	R	Indiv. 2.78 AC	Accum. 2.78 AC	AREA (Ha)	R	Indiv. 2.78 AC	Accum. 2.78 AC	Time of Conc. (min)	Intensity 2 Year (mm/h)	Intensity 5 Year (mm/h)	Intensity 10 Year (mm/h)	Intensity 100 Year (mm/h)	Peak Flow Q (l/s)	DIA. (mm) (actual)	DIA. (mm) (nominal)	TYPE	SLOPE (%)	LENGTH (m)	CAPACITY (l/s)	VELOCITY (m/s)	TIME OF FLOW (min)	RATIO Q/Q full
Contribution From Street 29, Pipe 116 - 122						8.57				1.48				0.00				0.00	19.60														
	122	124			0.00	9.52	0.06	0.65	0.11	5.69			0.00	0.00			0.00	0.00	19.60	52.69	71.15	83.27	121.50	907	975	975	CONC	0.23	17.0	1074.7714	1.4395	0.1968	0.844
To Street 30, Pipe 124 - 125						9.52				5.69				0.00				0.00	19.79														
Street 30																																	
Contribution From Street 17, Pipe 122 - 124						9.52				5.69				0.00				0.00	19.79														
Contribution From Street 17, Pipe 123 - 124						0.00				0.22				0.00				0.00	10.29														
	124	125	0.16	0.65	0.29	9.81			0.00	5.91			0.00	0.00			0.00	0.00	19.79	52.37	70.71	82.75	120.74	932	1050	1050	CONC	0.19	34.5	1190.2955	1.3746	0.4183	0.783
	125	OGS W1	0.20	0.65	0.36	10.17			0.00	5.91			0.00	0.00			0.00	0.00	20.21	51.69	69.79	81.67	119.16	938	1050	1050	CONC	0.19	35.0	1190.2955	1.3746	0.4244	0.788

Definitions:
Q = 2.78 AIR, where
Q = Peak Flow in Litres per second (L/s)
A = Areas in hectares (ha)
I = Rainfall Intensity (mm/h)
R = Runoff Coefficient

Notes:
1) Ottawa Rainfall-Intensity Curve
2) Min. Velocity = 0.80 m/s

LICENSED PROFESSIONAL ENGINEER
W. LIU
100167932
21-10-15
PROVINCE OF ONTARIO

Designed: A.K.	PROJECT: BARRHAVEN CONSERVANCY WEST			
Checked: W.L.	LOCATION: City of Ottawa			
Dwg. Reference:	File Ref: 20-1226	Date: Oct 2021	Sheet No. SHEET 7 OF 7	

1226_STM_Designsheet.xlsx

CDS ESTIMATED NET ANNUAL SOLIDS LOAD REDUCTION
BASED ON THE RATIONAL RAINFALL METHOD
BASED ON A FINE PARTICLE SIZE DISTRIBUTION

Project Name: 891 Conservancy East
Location: Ottawa, ON
OGS #: W1

Engineer: DSEL
Contact: M. Pichette
Report Date: 14-Oct-21

Area 8.92 ha
Weighted C 0.65
CDS Model 5640

Rainfall Station # 215
Particle Size Distribution FINE
CDS Treatment Capacity 255 l/s

Rainfall Intensity[1] (mm/hr)	Percent Rainfall Volume[1]	Cumulative Rainfall Volume	Total Flowrate (l/s)	Treated Flowrate (l/s)	Operating Rate (%)	Removal Efficiency (%)	Incremental Removal (%)
1.0	10.6%	19.8%	16.1	16.1	6.3	97.0	10.3
1.5	9.9%	29.7%	24.2	24.2	9.5	96.1	9.5
2.0	8.4%	38.1%	32.2	32.2	12.6	95.2	8.0
2.5	7.7%	45.8%	40.3	40.3	15.8	94.3	7.3
3.0	5.9%	51.7%	48.4	48.4	19.0	93.4	5.6
3.5	4.4%	56.1%	56.4	56.4	22.1	92.5	4.0
4.0	4.7%	60.7%	64.5	64.5	25.3	91.6	4.3
4.5	3.3%	64.0%	72.5	72.5	28.5	90.7	3.0
5.0	3.0%	67.1%	80.6	80.6	31.6	89.8	2.7
6.0	5.4%	72.4%	96.7	96.7	37.9	88.0	4.7
7.0	4.4%	76.8%	112.8	112.8	44.3	86.2	3.7
8.0	3.5%	80.3%	128.9	128.9	50.6	84.4	3.0
9.0	2.8%	83.2%	145.1	145.1	56.9	82.5	2.3
10.0	2.2%	85.3%	161.2	161.2	63.2	80.7	1.8
15.0	7.0%	92.3%	241.8	241.8	94.9	71.7	5.0
20.0	4.5%	96.9%	322.4	254.9	100.0	55.5	2.5
25.0	1.4%	98.3%	403.0	254.9	100.0	44.4	0.6
30.0	0.7%	99.0%	483.6	254.9	100.0	37.0	0.2
35.0	0.5%	99.5%	564.1	254.9	100.0	31.7	0.1
40.0	0.5%	100.0%	644.7	254.9	100.0	27.7	0.2
45.0	0.0%	100.0%	725.3	254.9	100.0	24.7	0.0
50.0	0.0%	100.0%	805.9	254.9	100.0	22.2	0.0
							87.9

Removal Efficiency Adjustment[2] = 6.5%
Predicted Net Annual Load Removal Efficiency = 81.4%
Predicted Annual Rainfall Treated = 97.6%

1 - Based on 42 years of hourly rainfall data from Canadian Station 6105976, Ottawa ON
2 - Reduction due to use of 60-minute data for a site that has a time of concentration less than 30-minutes.
3 - CDS Efficiency based on testing conducted at the University of Central Florida
4 - CDS design flowrate and scaling based on standard manufacturer model & product specifications

CDS ESTIMATED NET ANNUAL SOLIDS LOAD REDUCTION
BASED ON THE RATIONAL RAINFALL METHOD
BASED ON A FINE PARTICLE SIZE DISTRIBUTION

CONTECH ENGINEERED SOLUTIONS

CDS TECHNOLOGIES

Project Name: 891 Conservancy East
Location: Ottawa, ON
OGS #: W2

Engineer: DSEL
Contact: M. Pichette
Report Date: 14-Oct-21

Area 8.22 ha
Weighted C 0.65
CDS Model 4045

Rainfall Station # 215
Particle Size Distribution FINE
CDS Treatment Capacity 212 l/s

Rainfall Intensity[1] (mm/hr)	Percent Rainfall Volume[1]	Cumulative Rainfall Volume	Total Flowrate (l/s)	Treated Flowrate (l/s)	Operating Rate (%)	Removal Efficiency (%)	Incremental Removal (%)
1.0	10.6%	19.8%	14.9	14.9	7.0	96.9	10.3
1.5	9.9%	29.7%	22.3	22.3	10.5	95.9	9.5
2.0	8.4%	38.1%	29.7	29.7	14.0	94.8	7.9
2.5	7.7%	45.8%	37.1	37.1	17.5	93.8	7.2
3.0	5.9%	51.7%	44.6	44.6	21.0	92.8	5.5
3.5	4.4%	56.1%	52.0	52.0	24.5	91.8	4.0
4.0	4.7%	60.7%	59.4	59.4	28.0	90.8	4.2
4.5	3.3%	64.0%	66.8	66.8	31.5	89.8	3.0
5.0	3.0%	67.1%	74.3	74.3	35.0	88.8	2.7
6.0	5.4%	72.4%	89.1	89.1	42.0	86.8	4.7
7.0	4.4%	76.8%	104.0	104.0	49.0	84.8	3.7
8.0	3.5%	80.3%	118.8	118.8	55.9	82.8	2.9
9.0	2.8%	83.2%	133.7	133.7	62.9	80.8	2.3
10.0	2.2%	85.3%	148.5	148.5	69.9	78.8	1.7
15.0	7.0%	92.3%	222.8	212.4	100.0	66.9	4.7
20.0	4.5%	96.9%	297.1	212.4	100.0	50.2	2.3
25.0	1.4%	98.3%	371.3	212.4	100.0	40.1	0.6
30.0	0.7%	99.0%	445.6	212.4	100.0	33.5	0.2
35.0	0.5%	99.5%	519.9	212.4	100.0	28.7	0.1
40.0	0.5%	100.0%	594.1	212.4	100.0	25.1	0.1
45.0	0.0%	100.0%	668.4	212.4	100.0	22.3	0.0
50.0	0.0%	100.0%	742.7	212.4	100.0	20.1	0.0
							86.7

Removal Efficiency Adjustment[2] = 6.5%

Predicted Net Annual Load Removal Efficiency = 80.2%

Predicted Annual Rainfall Treated = 96.8%

1 - Based on 42 years of hourly rainfall data from Canadian Station 6105976, Ottawa ON
2 - Reduction due to use of 60-minute data for a site that has a time of concentration less than 30-minutes.
3 - CDS Efficiency based on testing conducted at the University of Central Florida
4 - CDS design flowrate and scaling based on standard manufacturer model & product specifications

CDS ESTIMATED NET ANNUAL SOLIDS LOAD REDUCTION
BASED ON THE RATIONAL RAINFALL METHOD
BASED ON A FINE PARTICLE SIZE DISTRIBUTION

Project Name: 891 Conservancy East — **Engineer:** DSEL
Location: Ottawa, ON — **Contact:** M. Pichette
OGS #: W3 — **Report Date:** 14-Oct-21

Area 9.90 ha — **Rainfall Station #** 215
Weighted C 0.65 — **Particle Size Distribution** FINE
CDS Model 5640 — **CDS Treatment Capacity** 255 l/s

Rainfall Intensity[1] (mm/hr)	Percent Rainfall Volume[1]	Cumulative Rainfall Volume	Total Flowrate (l/s)	Treated Flowrate (l/s)	Operating Rate (%)	Removal Efficiency (%)	Incremental Removal (%)
1.0	10.6%	19.8%	17.9	17.9	7.0	96.8	10.3
1.5	9.9%	29.7%	26.8	26.8	10.5	95.8	9.5
2.0	8.4%	38.1%	35.8	35.8	14.0	94.8	7.9
2.5	7.7%	45.8%	44.7	44.7	17.5	93.8	7.2
3.0	5.9%	51.7%	53.7	53.7	21.1	92.8	5.5
3.5	4.4%	56.1%	62.6	62.6	24.6	91.8	4.0
4.0	4.7%	60.7%	71.6	71.6	28.1	90.8	4.2
4.5	3.3%	64.0%	80.5	80.5	31.6	89.8	3.0
5.0	3.0%	67.1%	89.4	89.4	35.1	88.8	2.7
6.0	5.4%	72.4%	107.3	107.3	42.1	86.8	4.7
7.0	4.4%	76.8%	125.2	125.2	49.1	84.8	3.7
8.0	3.5%	80.3%	143.1	143.1	56.1	82.8	2.9
9.0	2.8%	83.2%	161.0	161.0	63.2	80.8	2.3
10.0	2.2%	85.3%	178.9	178.9	70.2	78.7	1.7
15.0	7.0%	92.3%	268.3	254.9	100.0	66.7	4.7
20.0	4.5%	96.9%	357.8	254.9	100.0	50.0	2.3
25.0	1.4%	98.3%	447.2	254.9	100.0	40.0	0.6
30.0	0.7%	99.0%	536.7	254.9	100.0	33.3	0.2
35.0	0.5%	99.5%	626.1	254.9	100.0	28.6	0.1
40.0	0.5%	100.0%	715.6	254.9	100.0	25.0	0.1
45.0	0.0%	100.0%	805.0	254.9	100.0	22.2	0.0
50.0	0.0%	100.0%	894.5	254.9	100.0	20.0	0.0
							86.6
						Removal Efficiency Adjustment[2] =	6.5%
						Predicted Net Annual Load Removal Efficiency =	**80.1%**
						Predicted Annual Rainfall Treated =	**96.7%**

1 - Based on 42 years of hourly rainfall data from Canadian Station 6105976, Ottawa ON
2 - Reduction due to use of 60-minute data for a site that has a time of concentration less than 30-minutes.
3 - CDS Efficiency based on testing conducted at the University of Central Florida
4 - CDS design flowrate and scaling based on standard manufacturer model & product specifications

CONTECH ENGINEERED SOLUTIONS

CDS ESTIMATED NET ANNUAL SOLIDS LOAD REDUCTION BASED ON THE RATIONAL RAINFALL METHOD BASED ON A FINE PARTICLE SIZE DISTRIBUTION

CDS TECHNOLOGIES

Project Name: 891 Conservancy East **Engineer:** DSEL
Location: Ottawa, ON **Contact:** M. Pichette
OGS #: W4 **Report Date:** 14-Oct-21

Area 8.60 ha
Weighted C 0.65
CDS Model 5640

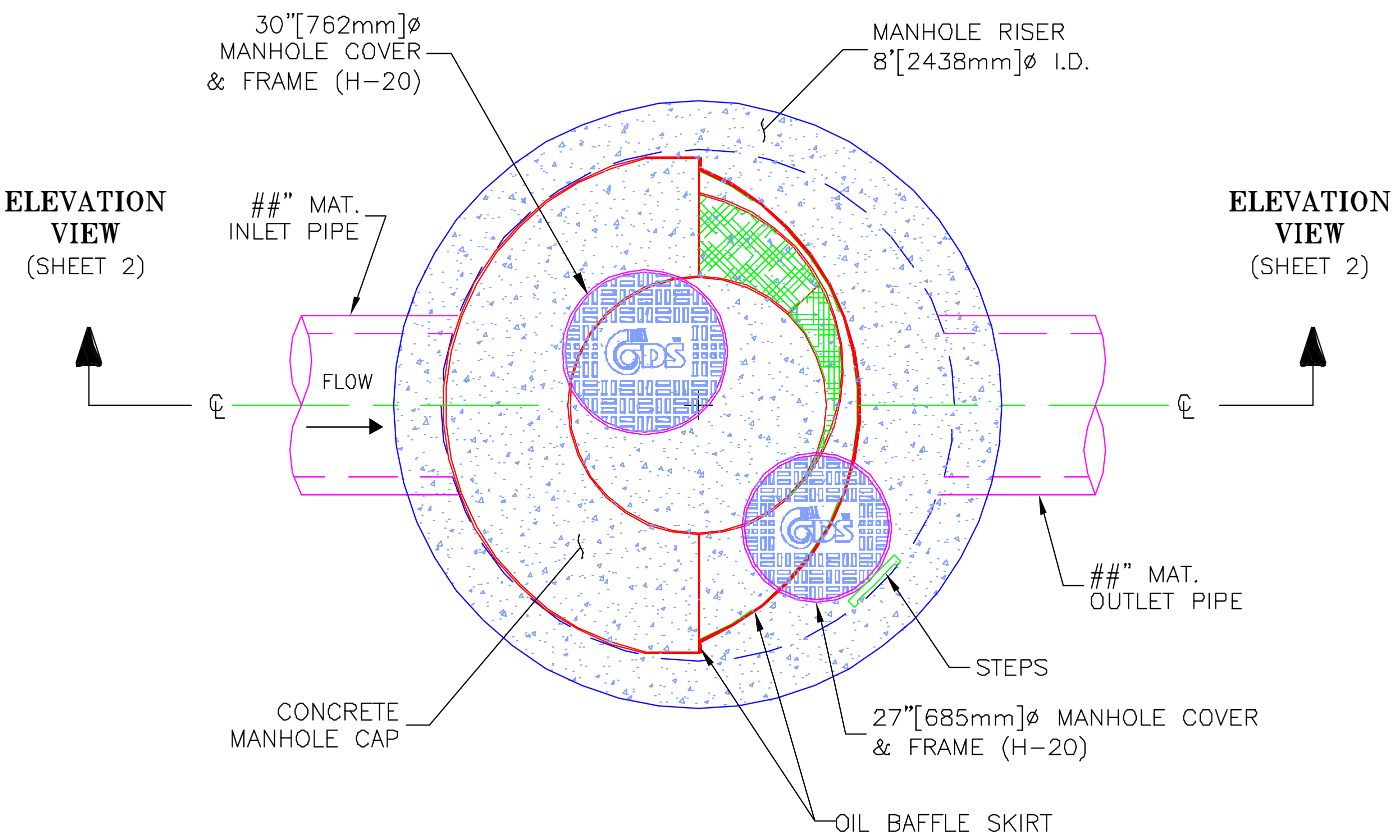
Rainfall Station # 215
Particle Size Distribution FINE
CDS Treatment Capacity 255 l/s

Rainfall Intensity[1] (mm/hr)	Percent Rainfall Volume[1]	Cumulative Rainfall Volume	Total Flowrate (l/s)	Treated Flowrate (l/s)	Operating Rate (%)	Removal Efficiency (%)	Incremental Removal (%)
1.0	10.6%	19.8%	15.5	15.5	6.1	97.1	10.3
1.5	9.9%	29.7%	23.3	23.3	9.1	96.2	9.5
2.0	8.4%	38.1%	31.1	31.1	12.2	95.4	8.0
2.5	7.7%	45.8%	38.9	38.9	15.2	94.5	7.3
3.0	5.9%	51.7%	46.6	46.6	18.3	93.6	5.6
3.5	4.4%	56.1%	54.4	54.4	21.3	92.7	4.0
4.0	4.7%	60.7%	62.2	62.2	24.4	91.9	4.3
4.5	3.3%	64.0%	69.9	69.9	27.4	91.0	3.0
5.0	3.0%	67.1%	77.7	77.7	30.5	90.1	2.7
6.0	5.4%	72.4%	93.2	93.2	36.6	88.4	4.8
7.0	4.4%	76.8%	108.8	108.8	42.7	86.6	3.8
8.0	3.5%	80.3%	124.3	124.3	48.8	84.9	3.0
9.0	2.8%	83.2%	139.9	139.9	54.9	83.1	2.3
10.0	2.2%	85.3%	155.4	155.4	61.0	81.4	1.8
15.0	7.0%	92.3%	233.1	233.1	91.5	72.6	5.1
20.0	4.5%	96.9%	310.8	254.9	100.0	57.6	2.6
25.0	1.4%	98.3%	388.5	254.9	100.0	46.1	0.7
30.0	0.7%	99.0%	466.2	254.9	100.0	38.4	0.3
35.0	0.5%	99.5%	543.9	254.9	100.0	32.9	0.2
40.0	0.5%	100.0%	621.6	254.9	100.0	28.8	0.2
45.0	0.0%	100.0%	699.3	254.9	100.0	25.6	0.0
50.0	0.0%	100.0%	777.0	254.9	100.0	23.0	0.0
							88.3

Removal Efficiency Adjustment[2] = 6.5%
Predicted Net Annual Load Removal Efficiency = 81.8%
Predicted Annual Rainfall Treated = 97.8%

1 - Based on 42 years of hourly rainfall data from Canadian Station 6105976, Ottawa ON
2 - Reduction due to use of 60-minute data for a site that has a time of concentration less than 30-minutes.
3 - CDS Efficiency based on testing conducted at the University of Central Florida
4 - CDS design flowrate and scaling based on standard manufacturer model & product specifications

PLAN VIEW

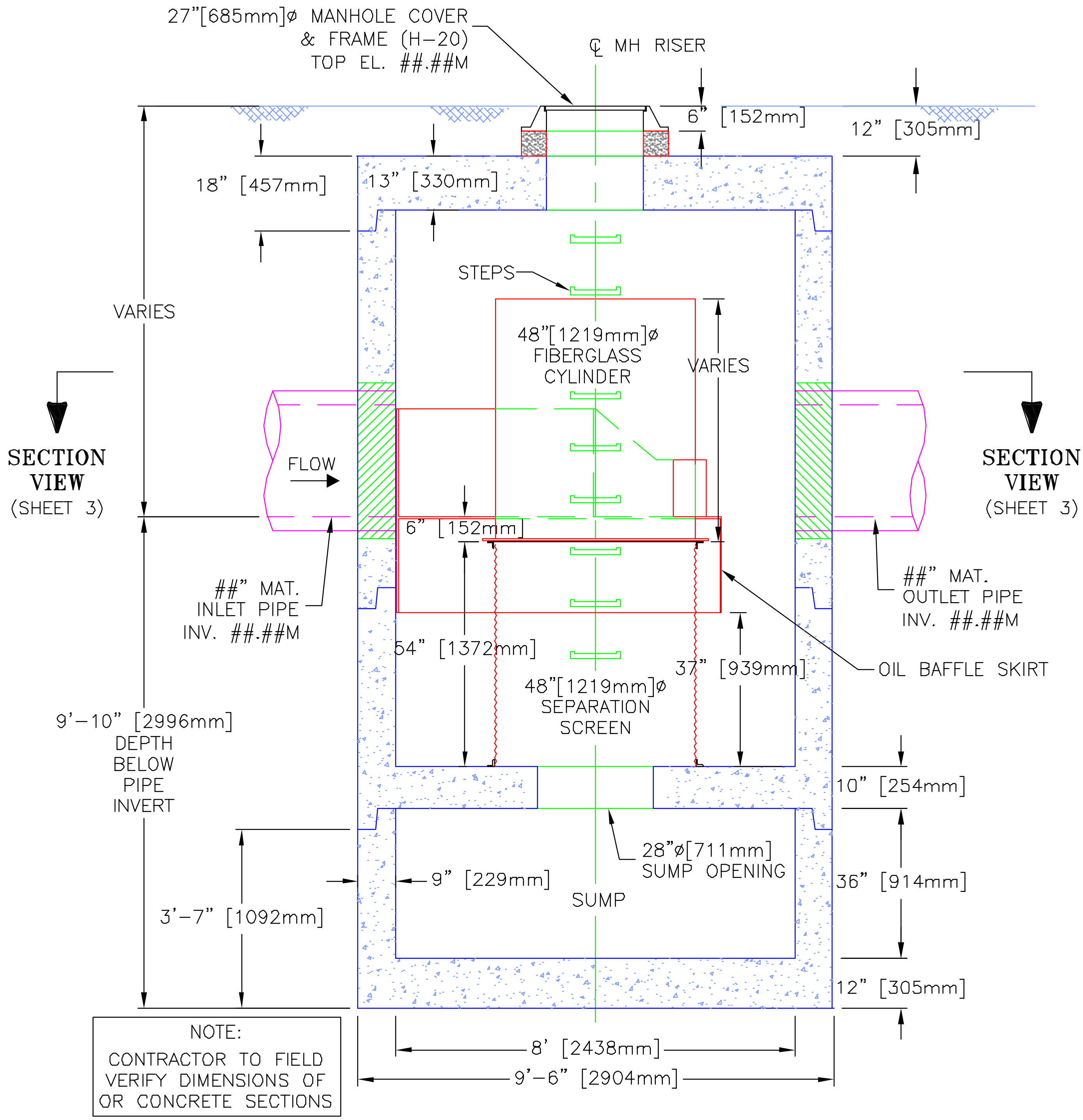


CDS MODEL PMSU40_45m, 7.5 CFS TREATMENT CAPACITY STORM WATER TREATMENT UNIT

CONTECH STORMWATER SOLUTIONS	PROJECT NAME CITY, STATE	JOB#	XX-##-###	SCALE 1" = 3'
		DATE	##/##/##	SHEET
		DRAWN	INITIALS	1
		APPROV.		

Echelon Environmental 505 Hood Road, Unit 26, Markham, Ontario L3R 5V6 Tel: (905) 948-0000 Fax: (905) 948-0577

ELEVATION VIEW



CDS MODEL PMSU40_45m, 7.5 CFS TREATMENT CAPACITY
STORM WATER TREATMENT UNIT

STORMWATER SOLUTIONS

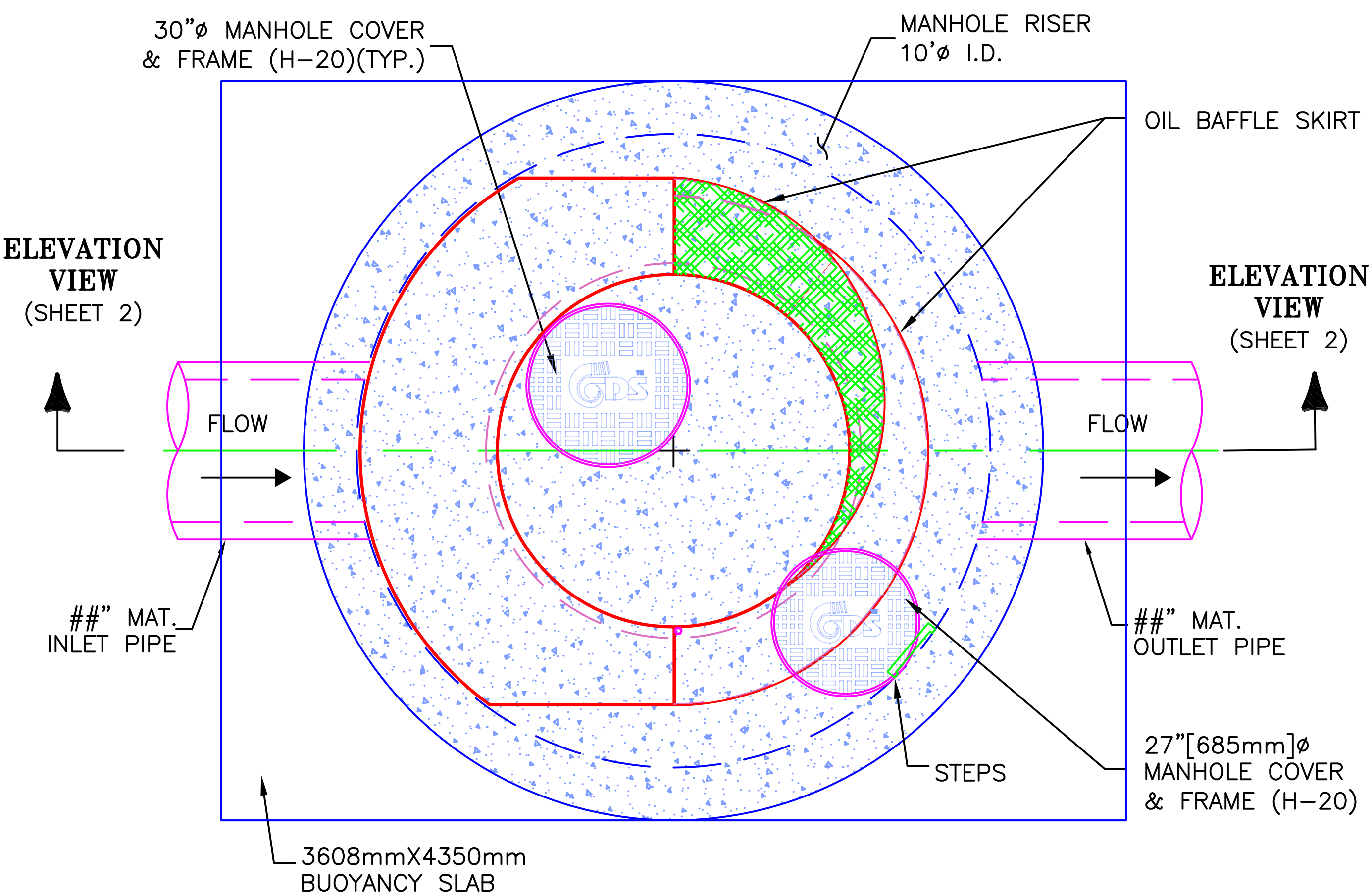
PROJECT NAME

CITY, STATE

JOB#	XX-##-###	SCALE 1" = 3'
DATE	##/##/##	SHEET
DRAWN	INITIALS	2
APPROV.		

Echelon Environmental 505 Hood Road, Unit 26, Markham, Ontario L3R 5V6 Tel: (905) 948-0000 Fax: (905) 948-0577

PLAN VIEW

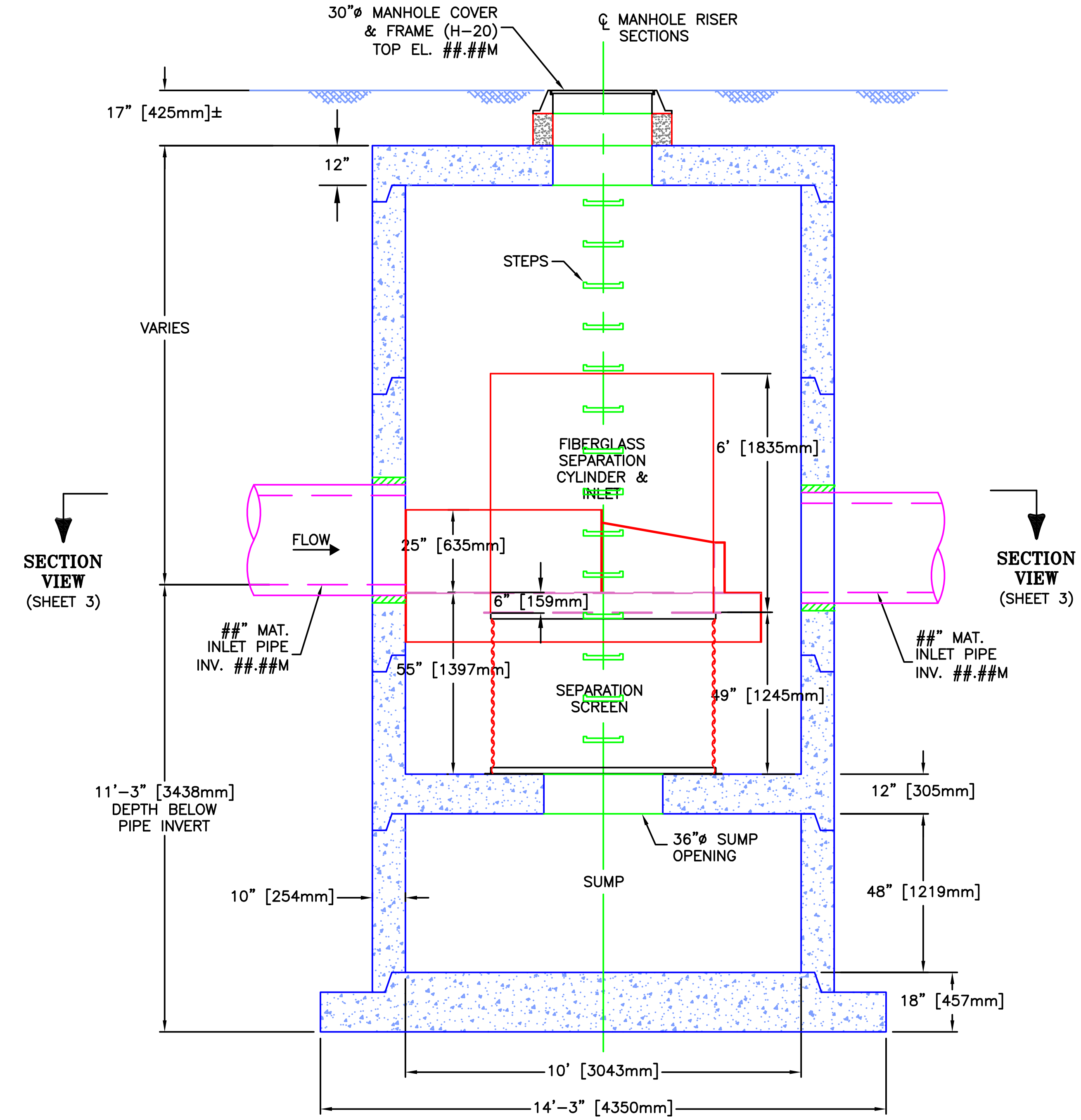


CDS MODEL PMSU56_40m, 9 CFS TREATMENT CAPACITY
STORM WATER TREATMENT UNIT

CONTECH STORMWATER SOLUTIONS	PROJECT NAME CITY, STATE	JOB#	XX-##-###	SCALE 1" = 3'
		DATE	##/##/##	SHEET
		DRAWN	INITIALS	1
		APPROV.		

Echelon Environmental 505 Hood Road, Unit 26, Markham, Ontario L3R 5V6 Tel: (905) 948-0000 Fax: (905) 948-0577
CONTECH Stormwater Solutions Inc. 930 Woodcock Road, Suite 101, Orlando, Florida 32803 Tel: (800) 848-9955

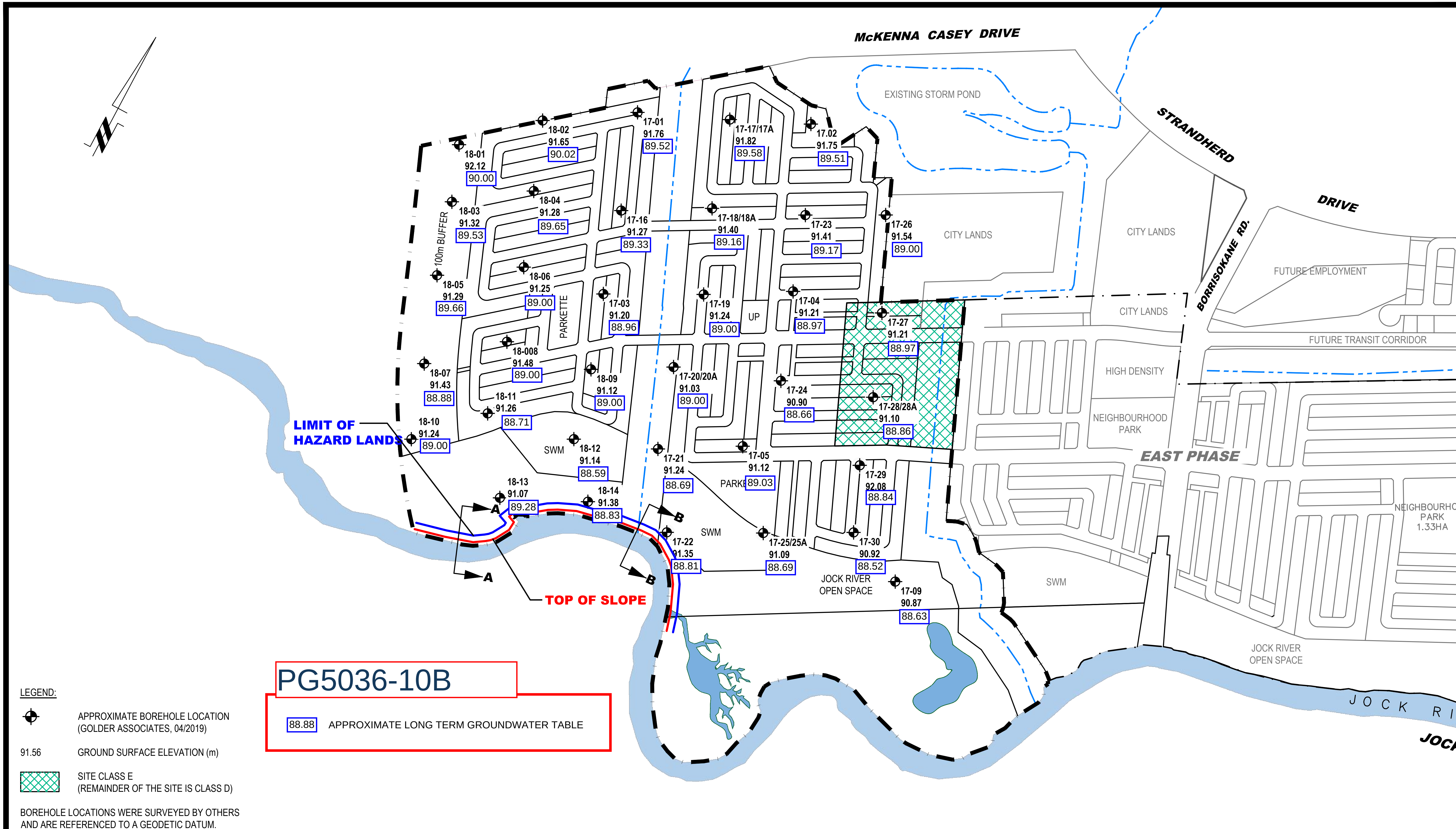
ELEVATION VIEW



CDS MODEL PMSU56_40m, 9 CFS TREATMENT CAPACITY STORM WATER TREATMENT UNIT

CONTECH STORMWATER SOLUTIONS	PROJECT NAME CITY, STATE	JOB#	XX-##-###	SCALE 1" = 4'
		DATE	##/##/##	SHEET
		DRAWN	INITIALS	2
		APPROV.		

Echelon Environmental 505 Hood Road, Unit 26, Markham, Ontario L3R 5V6 Tel: (905) 948-0000 Fax: (905) 948-0577
CONTECH Stormwater Solutions Inc. 930 Woodcock Road, Suite 101, Orlando, Florida 32803 Tel: (800) 848-9955



patersongroup
consulting engineers

154 Colonnade Road South
Ottawa, Ontario K2E 7J5
Tel: (613) 226-7381 Fax: (613) 226-6344

NO.	REVISIONS	DATE	INITIAL
0			

CAIVAN COMMUNITIES

GEOTECHNICAL INVESTIGATION
PROP. RESIDENTIAL DEVELOPMENT - CONSERVANCY LANDS WEST
OTTAWA, ONTARIO

Title:
TEST HOLE LOCATION PLAN

Scale: 1:6000	Date: 09/2019
Drawn by: MPG	Report No.: PG5036-2
Checked by: SD	PG5036-4
Approved by: SD	Revision No.:

p:\autocad drawings\geotechnical\pg50xx\pg5036\pg5035-3 thlp west land.dwg

J.F. Sabourin and Associates Inc.
52 Springbrook Drive,
Ottawa, ON K2S 1B9
T 613-836-3884 F 613-836-0332

jfsa.com

Ottawa. ON
Paris. ON
Gatineau. QC
Montréal. QC
Québec. QC

October 14, 2021 Project Number: 1474

David Schaeffer Engineering Ltd
120 Iber Road, Unit 103
Ottawa, Ontario
K2S 1E9

Attention: **Steve Pichette, P.Eng**

Subject: **BCDC Phase 3 – Preliminary HGL Analysis**

Introduction

Phase 3 of the Barrhaven Conservancy Development is located in Barrhaven, Ontario, north of the Jock River, east of highway 416 and west of the Foster Creek. The proposed development is approximately 35.6 ha that will primarily comprise of single and townhouse residential lots along with a 2.91 ha park. The following outlines the preliminary hydraulic grade line (HGL) assessment for the site, to ensure that the proposed minor system within the development is adequately sized to safely convey flows to the Jock River under various conditions. As such the following memo outlines the approach taken in assessing the development's HGL and summarises the findings of this analysis.

Analysis Approach

Preliminary hydraulic grade line calculations for the proposed BCDC Phase 3 development were completed using PCSWMM modelling software. Pipe data, storm sewer layout and Rational Method flows in the storm sewer are as provided by DSEL. The Rational Method flows were calculated based on the 2-, 5- or 10-year level of service requirements, and the 100-year flows in the hydraulic grade line calculations were estimated as 14% greater than the Rational Method flows, to account for the additional flows captured by catchbasin grates, lead pipes and/or inlet control devices under the higher surface water depths of the 100-year storm. The proposed storm sewer infrastructure data was extracted from DSEL's detailed drawings and incorporated into a PCSWMM model, and flows derived by DSEL's rational method calculations were then applied to each Maintenance Hole (MH) in the model as steady flows (using the baseflow option). Exit losses were applied to all storm sewer pipes in the system based on the angle of the downstream connection. As with all other works completed for the BCDC development phases, the preliminary HGL analysis was completed under two conditions:

- 100-year rainfall event on the development and a 5-year spring water level on the Jock River
- 5-year rainfall event on the development and a 100-year spring water level on the Jock River

Note that the water level along the Jock River through the length of this development varies, and as such the nearest corresponding upstream water surface elevation calculated by RVCA's HEC-RAS floodplain mapping model of the Jock River was applied at each of the respective storm sewer outlets. Also, note that assuming a 5-year spring water level on the Jock River for a 100-year rainfall event on the development is an inherently conservative assumption, as the critical storm for the proposed development is a summer (intense rainfall) event while the critical storm for the Jock River is a Spring (snowmelt + rainfall) event. A preliminary Single Station Flood Frequency analysis was completed by JFSA using only summer flows (from May 15 to October 31) based on historical flow data recorded at the Moodie Drive Water Survey Canada gauge. This analysis found that the 100-year summer flow on the Jock River is around 99 m³/s, while the 5-year spring flow is around 123 m³/s.

Results

The maximum HGL obtained at each MH has been extracted from the 100-year event / 5-year Jock River water level scenario and 5-year event / 100-year Jock River water level scenario, with the results from this analysis provided in Tables 1 & 2, respectively. As all proposed units within this development will have sump pumps, the simulated HGL was compared against the top of MH elevation to ensure that all storm sewers infrastructure is sufficiently sized and is not surcharging to the major system during the assessed events.

From this analysis, it was found that the critical scenario for HGL within the development was the 5-year development event and 100-year water level on the Jock River scenario. Based on this scenario, no MHs will have an HGL elevation above the top of MH (minimum freeboard of 0.07 m at MH-11300), with an average freeboard of 0.62 m from the top of MH throughout the proposed development. For the 100-year event and 5-year water level on the Jock River, no MHs will have HGL elevations above the top of MH (minimum freeboard of 0.64 m at MH-11300), with an average freeboard of 1.16 m from the top of MH throughout the proposed development. As such it can be concluded that the proposed storm sewer infrastructure is sufficiently sized, to safely convey minor system flows from the development under various extreme conditions.

Conclusion

A preliminary HGL analysis for Phase 2 of the Barrhaven Conservancy Development was completed using PCSWMM based on storm sewer and flow details provided by DSEL. From this analysis, it was found that the proposed storm sewer infrastructure is sufficiently sized to convey all minor system flows to the Jock River and will not result in any MHs surcharging to the street under extreme events such as 100-year rainfall event on the development and a 5-year spring water level on the Jock River and, a 5-year rainfall event on the development and a 100-year spring water level on the Jock River. With the former being the more critical scenario for the HGL within the development.

Yours truly,
J.F Sabourin and Associates Inc.

LICENSED PROFESSIONAL ENGINEER
J. J. BURNETT
100227734
PROVINCE OF ONTARIO

Jonathon Burnett, P.Eng
Water Resources Engineer

cc: J.F Sabourin, M.Eng, P.Eng
Director of Water Resources Projects

Figures

Tables

Attachments

Legend

- Junctions
- Conduits
- Outfalls
- Development Lines

Table 1: BCDC Phase 3 - Preliminary HGL Analysis
100-Year BCDC Development & 5-Year Jock River

MH-ID	Invert Elevation	Top of MH (m)	Max HGL (m)	Freeboard (m)
1	91.42	93.84	92.26	1.58
2	91.69	93.73	92.16	1.57
3	91.46	93.63	92.04	1.59
4	91.27	93.62	92.00	1.62
5	91.05	93.51	91.92	1.59
6	90.91	93.38	91.83	1.55
7	90.72	93.30	91.75	1.55
8	91.12	93.35	91.78	1.57
9	91.23	93.31	91.78	1.53
10	90.62	93.22	91.70	1.52
11	91.82	93.69	92.25	1.44
12	91.67	93.66	92.21	1.45
13	91.44	93.65	92.14	1.51
14	91.19	93.54	92.03	1.51
15	90.99	93.45	91.94	1.51
16	90.88	93.36	91.88	1.48
17	90.71	93.25	91.77	1.48
18	90.61	93.23	91.73	1.50
19	90.45	93.15	91.64	1.51
20	91.71	93.68	92.25	1.43
21	91.43	93.58	92.12	1.46
22	91.16	93.48	91.98	1.50
23	90.93	93.39	91.88	1.51
24	90.73	93.26	91.76	1.50
25	90.60	93.20	91.69	1.51
26	90.43	93.14	91.61	1.53
27	90.71	93.15	91.63	1.52
28	90.65	93.13	91.61	1.52
29	90.15	93.05	91.48	1.57
31	91.78	93.78	92.56	1.22
32	91.82	93.76	92.54	1.22
33	91.65	93.71	92.45	1.26
34	91.46	93.69	92.42	1.27
35	91.15	93.58	92.33	1.25
36	91.02	93.46	92.29	1.17
37	90.91	93.37	92.24	1.13
38	91.47	93.66	92.44	1.22
39	91.44	93.56	92.32	1.24
40	91.22	93.53	92.32	1.21
41	91.08	93.44	92.27	1.17
42	91.17	93.38	92.16	1.22
43	90.88	93.35	92.17	1.18
44	90.66	93.28	92.14	1.14
45	91.22	93.50	92.22	1.28
46	90.97	93.32	92.12	1.20

Table 1: BCDC Phase 3 - Preliminary HGL Analysis
100-Year BCDC Development & 5-Year Jock River

MH-ID	Invert Elevation	Top of MH (m)	Max HGL (m)	Freeboard (m)
47	90.50	93.19	92.02	1.17
48	90.39	93.12	91.96	1.16
49	90.78	93.12	91.96	1.16
50	90.30	93.09	91.91	1.18
51	90.21	93.08	91.88	1.20
52	90.02	93.00	91.71	1.29
53	90.72	93.00	91.62	1.38
54	89.92	92.95	91.61	1.34
55	89.75	92.82	91.48	1.34
56	89.70	92.81	91.45	1.36
57	90.70	92.95	91.73	1.22
58	90.48	92.88	91.62	1.26
59	90.32	92.81	91.50	1.31
60	90.26	92.80	91.46	1.34
61	89.61	92.77	91.34	1.43
63	91.68	93.61	92.61	1.00
64	91.62	93.66	92.56	1.10
65	91.30	93.52	92.46	1.06
66	91.05	93.42	92.34	1.08
67	90.65	93.29	92.21	1.08
68	90.49	93.20	92.13	1.07
69	91.28	93.49	92.44	1.05
70	91.03	93.36	92.32	1.04
71	90.88	93.26	92.26	1.00
72	90.69	93.20	92.14	1.06
73	90.24	93.11	92.06	1.05
74	90.95	93.27	92.12	1.15
75	90.12	93.01	91.98	1.03
76	89.96	92.92	91.82	1.10
77	89.82	92.82	91.66	1.16
78	89.67	92.71	91.53	1.18
79	89.62	92.69	91.48	1.21
80	90.40	92.80	91.61	1.19
81	90.18	92.68	91.47	1.21
82	90.08	92.66	91.43	1.23
83	89.52	92.65	91.35	1.30
85	91.75	93.63	92.61	1.02
86	91.52	93.59	92.54	1.05
87	91.34	93.57	92.51	1.06
88	91.23	93.53	92.42	1.11
89	91.04	93.52	92.37	1.15
90	90.89	93.45	92.31	1.14
91	91.18	93.31	92.32	0.99
92	91.14	93.09	92.32	0.77
93	91.09	93.23	92.21	1.02

Table 1: BCDC Phase 3 - Preliminary HGL Analysis
100-Year BCDC Development & 5-Year Jock River

MH-ID	Invert Elevation	Top of MH (m)	Max HGL (m)	Freeboard (m)
94	90.87	92.98	92.20	0.78
95	91.47	93.55	92.44	1.11
96	91.24	93.15	92.39	0.76
97	91.12	93.13	92.38	0.75
98	90.92	93.04	92.29	0.75
99	90.76	92.95	92.19	0.76
100	90.71	92.93	92.16	0.77
101	90.54	92.92	92.10	0.82
102	90.37	92.83	92.00	0.83
103	91.16	93.24	91.91	1.33
104	90.17	92.81	91.87	0.94
105	90.07	92.73	91.84	0.89
106	89.96	92.65	91.77	0.88
107	89.89	92.63	91.74	0.89
108	90.87	93.08	91.98	1.10
109	90.73	92.68	91.93	0.75
110	90.72	92.75	92.04	0.71
111	90.94	92.82	91.95	0.87
112	90.68	92.77	91.91	0.86
113	90.53	92.54	91.75	0.79
114	90.44	92.60	91.90	0.70
115	90.28	92.67	91.86	0.81
116	89.80	92.62	91.69	0.93
117	90.83	92.94	91.83	1.11
118	90.58	92.52	91.74	0.78
119	90.47	92.51	91.73	0.78
120	90.17	92.45	91.70	0.75
121	89.97	92.57	91.61	0.96
122	89.59	92.53	91.51	1.02
123	90.59	92.87	91.33	1.54
124	89.48	92.50	91.30	1.20
125	89.40	92.45	91.24	1.21
1500	91.41	93.45	91.84	1.61
3200	91.97	93.77	92.70	1.07
4000	91.47	93.52	92.30	1.22
5200	90.89	93.00	91.75	1.25
6400	91.79	93.59	92.73	0.86
7000	91.25	93.37	92.21	1.16
7700	90.77	92.83	91.74	1.09
9000	90.94	93.30	91.74	1.56
10200	91.05	92.83	91.95	0.88
11000	90.93	92.74	91.95	0.79
11100	91.02	92.81	92.14	0.67
11200	90.64	92.76	91.93	0.83
11300	90.61	92.54	91.90	0.64

Table 1: BCDC Phase 3 - Preliminary HGL Analysis
100-Year BCDC Development & 5-Year Jock River

MH-ID	Invert Elevation	Top of MH (m)	Max HGL (m)	Freeboard (m)
90000	91.42	93.45	92.40	1.05
11100	91.02	92.81	92.14	0.67
11200	90.64	92.76	91.93	0.83
11300	90.61	92.54	91.90	0.64
90000	91.42	93.45	92.40	1.05
			Min	0.64
			Max	1.62
			Average	1.16

Note: Analysis assumes 5 year spring water level on the Jock River

Model Name:BCDC-P3_HGL_v01-100YrDev-5YrJock.inp

Table 2: BCDC Phase 3 - Preliminary HGL Analysis
5-Year BCDC Development & 100-Year Jock River

MH-ID	Invert Elevation	Top of MH (m)	Max HGL (m)	Freeboard (m)
1	91.42	93.84	92.76	1.08
2	91.69	93.73	92.68	1.05
3	91.46	93.63	92.58	1.05
4	91.27	93.62	92.56	1.06
5	91.05	93.51	92.49	1.02
6	90.91	93.38	92.43	0.95
7	90.72	93.30	92.37	0.93
8	91.12	93.35	92.39	0.96
9	91.23	93.31	92.39	0.92
10	90.62	93.22	92.33	0.89
11	91.82	93.69	92.75	0.94
12	91.67	93.66	92.72	0.94
13	91.44	93.65	92.67	0.98
14	91.19	93.54	92.58	0.96
15	90.99	93.45	92.51	0.94
16	90.88	93.36	92.47	0.89
17	90.71	93.25	92.38	0.87
18	90.61	93.23	92.35	0.88
19	90.45	93.15	92.28	0.87
20	91.71	93.68	92.75	0.93
21	91.43	93.58	92.65	0.93
22	91.16	93.48	92.55	0.93
23	90.93	93.39	92.47	0.92
24	90.73	93.26	92.37	0.89
25	90.60	93.20	92.32	0.88
26	90.43	93.14	92.26	0.88
27	90.71	93.15	92.27	0.88
28	90.65	93.13	92.26	0.87
29	90.15	93.05	92.16	0.89
30	90.00	93.04	92.06	0.98
31	91.78	93.78	92.99	0.79
32	91.82	93.76	92.97	0.79
33	91.65	93.71	92.90	0.81
34	91.46	93.69	92.88	0.81
35	91.15	93.58	92.81	0.77
36	91.02	93.46	92.78	0.68
37	90.91	93.37	92.74	0.63
38	91.47	93.66	92.89	0.77
39	91.44	93.56	92.81	0.75
40	91.22	93.53	92.81	0.72
41	91.08	93.44	92.77	0.67
42	91.17	93.38	92.68	0.70
43	90.88	93.35	92.68	0.67
44	90.66	93.28	92.66	0.62
45	91.22	93.50	92.73	0.77

Table 2: BCDC Phase 3 - Preliminary HGL Analysis
5-Year BCDC Development & 100-Year Jock River

MH-ID	Invert Elevation	Top of MH (m)	Max HGL (m)	Freeboard (m)
46	90.97	93.32	92.65	0.67
47	90.50	93.19	92.58	0.61
48	90.39	93.12	92.53	0.59
49	90.78	93.12	92.52	0.60
50	90.30	93.09	92.49	0.60
51	90.21	93.08	92.47	0.61
52	90.02	93.00	92.33	0.67
53	90.72	93.00	92.27	0.73
54	89.92	92.95	92.26	0.69
55	89.75	92.82	92.16	0.66
56	89.70	92.81	92.14	0.67
57	90.70	92.95	92.35	0.60
58	90.48	92.88	92.27	0.61
59	90.32	92.81	92.18	0.63
60	90.26	92.80	92.14	0.66
61	89.61	92.77	92.05	0.72
62	89.57	92.77	92.02	0.75
63	91.68	93.61	93.02	0.59
64	91.62	93.66	92.99	0.67
65	91.30	93.52	92.91	0.61
66	91.05	93.42	92.81	0.61
67	90.65	93.29	92.71	0.58
68	90.49	93.20	92.65	0.55
69	91.28	93.49	92.90	0.59
70	91.03	93.36	92.80	0.56
71	90.88	93.26	92.76	0.50
72	90.69	93.20	92.66	0.54
73	90.24	93.11	92.60	0.51
74	90.95	93.27	92.65	0.62
75	90.12	93.01	92.54	0.47
76	89.96	92.92	92.42	0.50
77	89.82	92.82	92.30	0.52
78	89.67	92.71	92.19	0.52
79	89.62	92.69	92.16	0.53
80	90.40	92.80	92.26	0.54
81	90.18	92.68	92.15	0.53
82	90.08	92.66	92.12	0.54
83	89.52	92.65	92.06	0.59
84	89.46	92.65	92.02	0.63
85	91.75	93.63	93.02	0.61
86	91.52	93.59	92.97	0.62
87	91.34	93.57	92.94	0.63
88	91.23	93.53	92.88	0.65
89	91.04	93.52	92.84	0.68
90	90.89	93.45	92.79	0.66

Table 2: BCDC Phase 3 - Preliminary HGL Analysis
5-Year BCDC Development & 100-Year Jock River

MH-ID	Invert Elevation	Top of MH (m)	Max HGL (m)	Freeboard (m)
91	91.18	93.31	92.80	0.51
92	91.14	93.09	92.80	0.29
93	91.09	93.23	92.71	0.52
94	90.87	92.98	92.70	0.28
95	91.47	93.55	92.88	0.67
96	91.24	93.15	92.84	0.31
97	91.12	93.13	92.83	0.30
98	90.92	93.04	92.77	0.27
99	90.76	92.95	92.69	0.26
100	90.71	92.93	92.67	0.26
101	90.54	92.92	92.63	0.29
102	90.37	92.83	92.54	0.29
103	91.16	93.24	92.48	0.76
104	90.17	92.81	92.45	0.36
105	90.07	92.73	92.42	0.31
106	89.96	92.65	92.36	0.29
107	89.89	92.63	92.34	0.29
108	90.87	93.08	92.54	0.54
109	90.73	92.68	92.49	0.19
110	90.72	92.75	92.57	0.18
111	90.94	92.82	92.50	0.32
112	90.68	92.77	92.47	0.30
113	90.53	92.54	92.35	0.19
114	90.44	92.60	92.46	0.14
115	90.28	92.67	92.43	0.24
116	89.80	92.62	92.30	0.32
117	90.83	92.94	92.41	0.53
118	90.58	92.52	92.34	0.18
119	90.47	92.51	92.33	0.18
120	90.17	92.45	92.31	0.14
121	89.97	92.57	92.24	0.33
122	89.59	92.53	92.16	0.37
123	90.59	92.87	92.02	0.85
124	89.48	92.50	92.00	0.50
125	89.40	92.45	91.95	0.50
126	89.35	92.41	91.90	0.51
1500	91.41	93.45	92.44	1.01
3200	91.97	93.77	93.10	0.67
4000	91.47	93.52	92.79	0.73
5200	90.89	93.00	92.37	0.63
6400	91.79	93.59	93.11	0.48
7000	91.25	93.37	92.72	0.65
7700	90.77	92.83	92.36	0.47
9000	90.94	93.30	92.36	0.94
10200	91.05	92.83	92.50	0.33

Table 2: BCDC Phase 3 - Preliminary HGL Analysis
5-Year BCDC Development & 100-Year Jock River

MH-ID	Invert Elevation	Top of MH (m)	Max HGL (m)	Freeboard (m)
11000	90.93	92.74	92.51	0.23
11100	91.02	92.81	92.65	0.16
11200	90.64	92.76	92.49	0.27
11300	90.61	92.54	92.47	0.07
90000	91.42	93.45	92.86	0.59
			Min	0.07
			Max	1.08
			Average	0.62

Note: Analysis assumes 100 year spring water level on the Jock River

Model Name:BCDC-P3_HGL_v01-5YrDev-100YrJock.inp

J.F. Sabourin and Associates Inc.
52 Springbrook Drive,
Ottawa, ON K2S 1B9
T 613-836-3884   F 613-836-0332

jfsa.com

Ottawa. ON
Paris. ON
Gatineau. QC
Montréal. QC
Québec. QC

Attachment A

DSEL Rational Method Calculations

STORM SEWER CALCULATION SHEET (RATIONAL METHOD)

Local Roads Return Frequency = 2 years
Collector Roads Return Frequency = 5 years
Manning 0.013 Arterial Roads Return Frequency = 10 years

Ottawa

LOCATION			AREA (Ha)																FLOW						SEWER DATA								
			2 YEAR				5 YEAR				10 YEAR				100 YEAR				Time of	Intensity	Intensity	Intensity	Intensity	Peak Flow	DIA. (mm)	DIA. (mm)	TYPE	SLOPE	LENGTH	CAPACITY	VELOCITY	TIME OF	RATIO
			AREA	R	Indiv.	Accum.	AREA	R	Indiv.	Accum.	AREA	R	Indiv.	Accum.	AREA	R	Indiv.	Accum.	Conc.	2 Year	5 Year	10 Year	100 Year										
Location	From Node	To Node	(Ha)		2.78 AC	2.78 AC	(Ha)		2.78 AC	2.78 AC	(Ha)		2.78 AC	2.78 AC	(Ha)		2.78 AC	2.78 AC	(min)	(mm/h)	(mm/h)	(mm/h)	(mm/h)	Q (l/s)	(actual)	(nominal)		(%)	(m)	(l/s)	(m/s)	LOW (min	Q/Q full
Unknown Road2 - 02																																	
	9000	27	0.58	0.65	1.05	1.05			0.00	0.00			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	80	450	450	CONC	0.20	103.0	127.5033	0.8017	2.1413	0.631
	27	28	0.11	0.65	0.20	1.25			0.00	0.00			0.00	0.00			0.00	0.00	12.14	69.46	94.10	110.25	161.10	87	450	450	CONC	0.20	12.5	127.5033	0.8017	0.2599	0.679
	28	29	0.19	0.65	0.34	1.59			0.00	0.00			0.00	0.00			0.00	0.00	12.40	68.67	93.02	108.98	159.23	109	450	450	CONC	0.25	50.5	142.5531	0.8963	0.9390	0.766
To Unknown Road1 - 01, Pipe 29 - 30						1.59				0.00				0.00				0.00	13.34														
	11	20	0.09	0.65	0.16	0.16			0.00	0.00			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	12	300	300	PVC	0.35	10.5	57.2089	0.8093	0.2162	0.218
	20	21	0.40	0.65	0.72	0.89			0.00	0.00			0.00	0.00			0.00	0.00	10.22	75.98	103.06	120.81	176.61	67	375	375	PVC	0.30	67.0	96.0323	0.8695	1.2843	0.701
	21	22	0.39	0.65	0.70	1.59			0.00	0.00			0.00	0.00			0.00	0.00	11.50	71.49	96.88	113.53	165.91	114	450	450	CONC	0.30	67.0	156.1591	0.9819	1.1373	0.728
	22	23	0.36	0.65	0.65	2.24			0.00	0.00			0.00	0.00			0.00	0.00	12.64	67.97	92.06	107.85	157.57	152	525	525	CONC	0.25	61.5	215.0311	0.9933	1.0319	0.708
	23	24	0.47	0.65	0.85	3.09			0.00	0.00			0.00	0.00			0.00	0.00	13.67	65.10	88.12	103.22	150.77	201	600	600	CONC	0.20	82.0	274.5943	0.9712	1.4072	0.733
	24	25	0.24	0.65	0.43	3.52			0.00	0.00			0.00	0.00			0.00	0.00	15.08	61.59	83.31	97.56	142.47	217	600	600	CONC	0.25	41.5	307.0058	1.0858	0.6370	0.707
	25	26	0.22	0.65	0.40	3.92			0.00	0.00			0.00	0.00			0.00	0.00	15.71	60.13	81.32	95.22	139.03	236	600	600	CONC	0.25	39.0	307.0058	1.0858	0.5986	0.768
	26	29	0.32	0.65	0.58	4.50			0.00	0.00			0.00	0.00			0.00	0.00	16.31	58.83	79.54	93.13	135.97	265	675	675	CONC	0.20	63.0	375.9224	1.0505	0.9995	0.704
To Unknown Road1 - 01, Pipe 29 - 30						4.50				0.00				0.00				0.00	17.31														
	11	12	0.18	0.65	0.33	0.33			0.00	0.00			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	25	300	300	PVC	0.35	46.5	57.2089	0.8093	0.9576	0.437
	12	13	0.18	0.65	0.33	0.65			0.00	0.00			0.00	0.00			0.00	0.00	10.96	73.31	99.39	116.49	170.25	48	300	300	PVC	0.45	16.0	64.8688	0.9177	0.2906	0.735
	13	14	0.40	0.65	0.72	1.37			0.00	0.00			0.00	0.00			0.00	0.00	11.25	72.32	98.03	114.89	167.90	99	450	450	CONC	0.25	70.0	142.5531	0.8963	1.3016	0.697
	14	15	0.35	0.65	0.63	2.01			0.00	0.00			0.00	0.00			0.00	0.00	12.55	68.23	92.41	108.27	158.19	137	525	525	CONC	0.20	64.5	192.3297	0.8885	1.2100	0.712
	15	16	0.34	0.65	0.61	2.62			0.00	0.00			0.00	0.00			0.00	0.00	13.76	64.86	87.79	102.83	150.20	170	600	600	CONC	0.15	60.5	237.8056	0.8411	1.1989	0.715
	16	17	0.40	0.65	0.72	3.34			0.00	0.00			0.00	0.00			0.00	0.00	14.96	61.87	83.69	98.01	143.13	207	600	600	CONC	0.20	68.0	274.5943	0.9712	1.1670	0.753
	17	18	0.13	0.65	0.23	3.58			0.00	0.00			0.00	0.00			0.00	0.00	16.13	59.23	80.09	93.77	136.91	212	600	600	CONC	0.20	16.0	274.5943	0.9712	0.2746	0.772
	18	19	0.21	0.65	0.38	3.96			0.00	0.00			0.00	0.00			0.00	0.00	16.40	58.65	79.29	92.83	135.53	232	675	675	CONC	0.15	54.5	325.5584	0.9098	0.9984	0.713
To Unknown Road3 - 03, Pipe 19 - 29						3.96				0.00				0.00				0.00	17.40														
Unknown Road11 - 11																																	
	1500	6	0.08	0.65	0.14	0.14			0.00	0.00			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	11	300	300	PVC	0.35	59.5	57.2089	0.8093	1.2253	0.194
To Unknown Road3 - 03, Pipe 6 - 7						0.14				0.00				0.00				0.00	11.23														
Unknown Road1 - 01																																	
Contribution From Unknown Road3 - 03, Pipe 19 - 29						9.40				0.00				0.00				0.00	19.35														
Contribution From Unknown Road2 - 02, Pipe 26 - 29						4.50				0.00				0.00				0.00	17.31														
Contribution From Unknown Road2 - 02, Pipe 28 - 29						1.59				0.00				0.00				0.00	13.34														
	29	30	0.01	0.65	0.02	15.50			0.00	0.00			0.00	0.00			0.00	0.00	19.35	53.10	71.71	83.93	122.47	823	825	825	CONC	0.55	27.0	#######	1.9914	0.2260	0.773
Unknown Road17 - 18																																	
	3200	38	0.34	0.65	0.61	0.61			0.00	0.00			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	47	300	300	PVC	0.40	86.5	61.1589	0.8652	1.6662	0.772
	38	40	0.36	0.65	0.65	1.26			0.00	0.00			0.00	0.00			0.00	0.00	11.67	70.95	96.15	112.66	164.64	90	450	450	CONC	0.20	86.5	127.5033	0.8017	1.7983	0.704
Contribution From Unknown Road22 - 23, Pipe 39 - 40						0.05				0.00				0.00				0.00	10.50														
	40	41	0.23	0.65	0.42	1.73			0.00	0.00			0.00	0.00			0.00	0.00	13.46	65.65	88.87	104.10	152.07	114	525	525	CONC	0.20	61.5	192.3297	0.8885	1.1537	0.592
	41	43	0.23	0.65	0.42	2.15			0.00	0.00			0.00	0.00			0.00	0.00	14.62	62.68	84.81	99.33	145.06	135	525	525	CONC	0.20	61.5	192.3297	0.8885	1.1537	0.701
To Unknown Road14 - 14, Pipe 43 - 44						2.15				0.00				0.00				0.00	15.77														
Unknown Road9 - 09																																	
Contribution From Unknown Road3 - 03, Pipe 48 - 50						7.84				0.00				0.00				0.00	19.39														
Contribution From Unknown Road3 - 03, Pipe 49 - 50						1.32				0.00				0.00				0.00	12.51														
	50	51	0.01	0.65	0.02	9.18			0.00	0.00			0.00	0.00			0.00	0.00	19.39	53.03	71.61	83.81	122.29	487	900	900	CONC	0.15	13.0	701.1305	1.1021	0.1966	0.694
			0.03	0.65	0.05	9.23			0.00	0.00			0.00	0.00			0.00																
	51	52			0.00	9.23	2.91	0.40	3.24	3.24			0.00	0.00			0.00	0.00	19.59	52.70	71.16	83.28	121.52	717	975	975	CONC	0.20	55.0	#######	1.3424	0.6829	0.715
To Unknown Road6 - 06, Pipe 52 - 54						9.23				3.24				0.00				0.00	20.27														
Unknown Road5 - 05																																	
Contribution From Unknown Road6 - 06, Pipe 5200 - 57						0.22				0.00				0.00				0.00	10.70														
Contribution From Unknown Road6 - 06, Pipe 8 - 57						0.16				0.00				0.00				0.00	10.26														
	57	58	0.24	0.65	0.43	0.81			0.00	0.00			0.00	0.00			0.00	0.00	10.70	74.22	100.63	117.95	172.40	60	375	375	PVC	0.30	45.5	96.0323	0.8695	0.8722	0.628
	58	59	0.28	0.65	0.51	1.32			0.00	0.00			0.00	0.00			0.00	0.00	11.57	71.25	96.56	113.15	165.36	94	450	450	CONC	0.20	50.0	127.5033	0.8017	1.0395	0.737

Definitions:
Q = 2.78 AIR, where
Q = Peak Flow in Litres per second (L/s)
A = Areas in hectares (ha)
I = Rainfall Intensity (mm/h)
R = Runoff Coefficient

Notes:
1) Ottawa Rainfall-Intensity Curve
2) Min. Velocity = 0.80 m/s

Designed:	PROJECT:		
Checked:	LOCATION: City of Ottawa		
Dwg. Reference:	File Ref:	Date: 14 Oct 2021	Sheet No. SHEET 1 OF 7

STORM SEWER CALCULATION SHEET (RATIONAL METHOD)

Local Roads Return Frequency = 2 years
Collector Roads Return Frequency = 5 years
Manning 0.013 Arterial Roads Return Frequency = 10 years

LOCATION			AREA (Ha) 2 YEAR				5 YEAR				10 YEAR				100 YEAR				FLOW Time of Conc.	Intensity 2 Year	Intensity 5 Year	Intensity 10 Year	Intensity 100 Year	Peak Flow	SEWER DATA DIA. (mm)	DIA. (mm)	TYPE	SLOPE	LENGTH	CAPACITY	VELOCITY	TIME OF	RATIO
Location	From Node	To Node	AREA (Ha)	R	Indiv. 2.78 AC	Accum. 2.78 AC	AREA (Ha)	R	Indiv. 2.78 AC	Accum. 2.78 AC	AREA (Ha)	R	Indiv. 2.78 AC	Accum. 2.78 AC	AREA (Ha)	R	Indiv. 2.78 AC	Accum. 2.78 AC	(min)	(mm/h)	(mm/h)	(mm/h)	(mm/h)	Q (l/s)	(actual)	(nominal)		(%)	(m)	(l/s)	(m/s)	LOW (min	Q/Q full
	59	60	0.15	0.65	0.27	1.59			0.00	0.00			0.00	0.00			0.00	0.00	12.61	68.05	92.16	107.97	157.75	108	450	450	CONC	0.25	12.5	142.5531	0.8963	0.2324	0.759
	60	61	0.07	0.65	0.13	1.72			0.00	0.00			0.00	0.00			0.00	0.00	12.84	67.37	91.24	106.89	156.16	116	450	450	CONC	0.30	19.0	156.1591	0.9819	0.3225	0.741
To Unknown Road7 - 07, Pipe 61 - 62						1.72				0.00				0.00				0.00	13.17														
Contribution From Unknown Road6 - 06, Pipe 52 - 54						9.41				3.24				0.00				0.00	20.68														
Contribution From Unknown Road6 - 06, Pipe 53 - 54						0.22				0.00				0.00				0.00	10.57														
	54	55	0.50	0.65	0.90	10.53			0.00	3.24			0.00	0.00			0.00	0.00	20.68	50.96	68.79	80.49	117.43	759	1050	1050	CONC	0.15	90.0	#######	1.2214	1.2281	0.718
	55	56	0.10	0.65	0.18	10.72			0.00	3.24			0.00	0.00			0.00	0.00	21.91	49.15	66.32	77.59	113.18	741	1050	1050	CONC	0.15	11.0	#######	1.2214	0.1501	0.701
	56	61	0.09	0.65	0.16	10.88			0.00	3.24			0.00	0.00			0.00	0.00	22.06	48.94	66.03	77.25	112.68	746	1050	1050	CONC	0.15	25.5	#######	1.2214	0.3480	0.705
To Unknown Road7 - 07, Pipe 61 - 62						10.88				3.24				0.00				0.00	22.41														
Unknown Road7 - 07																																	
Contribution From Unknown Road5 - 05, Pipe 56 - 61						10.88				3.24				0.00				0.00	22.41														
Contribution From Unknown Road5 - 05, Pipe 60 - 61						1.72				0.00				0.00				0.00	13.17														
	61	62	0.01	0.65	0.02	12.61			0.00	3.24			0.00	0.00			0.00	0.00	22.41	48.45	65.37	76.48	111.55	823	1050	1050	CONC	0.15	26.5	#######	1.2214	0.3616	0.778
Unknown Road8 - 08																																	
Contribution From Unknown Road10 - 10, Pipe 81 - 82						1.66				0.00				0.00				0.00	13.23														
	82	83	0.05	0.65	0.09	1.75			0.00	0.00			0.00	0.00			0.00	0.00	13.23	66.28	89.75	105.13	153.58	116	450	450	CONC	0.30	13.5	156.1591	0.9819	0.2292	0.744
To Unknown Road12 - 12, Pipe 83 - 84						1.75				0.00				0.00				0.00	13.46														
Unknown Road20 - 21																																	
	6400	69	0.34	0.65	0.61	0.61			0.00	0.00			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	47	300	300	PVC	0.40	90.5	61.1589	0.8652	1.7433	0.772
	69	70	0.38	0.65	0.69	1.30			0.00	0.00			0.00	0.00			0.00	0.00	11.74	70.70	95.81	112.27	164.05	92	450	450	CONC	0.20	90.5	127.5033	0.8017	1.8814	0.721
Contribution From Unknown Road22 - 23, Pipe 39 - 70						0.04				0.00				0.00				0.00	10.24														
	70	71	0.23	0.65	0.42	1.75			0.00	0.00			0.00	0.00			0.00	0.00	13.62	65.22	88.28	103.41	151.05	114	525	525	CONC	0.20	61.5	192.3297	0.8885	1.1537	0.594
	71	72	0.23	0.65	0.42	2.17			0.00	0.00			0.00	0.00			0.00	0.00	14.78	62.30	84.28	98.70	144.14	135	525	525	CONC	0.20	61.5	192.3297	0.8885	1.1537	0.702
To Unknown Road14 - 14, Pipe 72 - 73						2.17				0.00				0.00				0.00	15.93														
Unknown Road22 - 23																																	
	39	70	0.02	0.65	0.04	0.04			0.00	0.00			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	3	300	300	PVC	0.95	19.5	94.2522	1.3334	0.2437	0.029
To Unknown Road20 - 21, Pipe 70 - 71						0.04				0.00				0.00				0.00	10.24														
	39	40	0.03	0.65	0.05	0.05			0.00	0.00			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	4	300	300	PVC	0.35	24.5	57.2089	0.8093	0.5045	0.073
To Unknown Road17 - 18, Pipe 40 - 41						0.05				0.00				0.00				0.00	10.50														
	4000	36	0.06	0.65	0.11	0.11			0.00	0.00			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	8	300	300	PVC	0.35	44.5	57.2089	0.8093	0.9164	0.146
To Unknown Road15 - 16, Pipe 36 - 37						0.11				0.00				0.00				0.00	10.92														
	7000	67	0.06	0.65	0.11	0.11			0.00	0.00			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	8	300	300	PVC	0.35	43.5	57.2089	0.8093	0.8958	0.146
To Unknown Road16 - 17, Pipe 67 - 68						0.11				0.00				0.00				0.00	10.90														
Contribution From Unknown Road15 - 16, Pipe 89 - 90						1.01				0.70				0.00				0.00	12.90														
	90	67	0.53	0.65	0.96	1.97			0.00	0.70			0.00	0.00			0.00	0.00	12.90	67.23	91.04	106.65	155.81	196	675	675	CONC	0.15	108.5	325.5584	0.9098	1.9877	0.603
To Unknown Road16 - 17, Pipe 67 - 68						1.97				0.70				0.00				0.00	14.88														
Unknown Road6 - 06																																	
	5200	57	0.12	0.65	0.22	0.22			0.00	0.00			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	17	300	300	PVC	0.35	34.0	57.2089	0.8093	0.7002	0.291
To Unknown Road5 - 05, Pipe 57 - 58						0.22				0.00				0.00				0.00	10.70														
	53	80	0.09	0.65	0.16	0.16			0.00	0.00			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	12	300	300	PVC	0.70	25.5	80.9057	1.1446	0.3713	0.154
To Unknown Road10 - 10, Pipe 80 - 81						0.16				0.00				0.00				0.00	10.37														
	53	54	0.12	0.65	0.22	0.22			0.00	0.00			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	17	300	300	PVC	0.35	27.5	57.2089	0.8093	0.5663	0.291
To Unknown Road5 - 05, Pipe 54 - 55						0.22				0.00				0.00				0.00	10.57														
	7700	80	0.25	0.65	0.45	0.45			0.00	0.00			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	35	300	300	PVC	0.35	64.0	57.2089	0.8093	1.3179	0.606
To Unknown Road10 - 10, Pipe 80 - 81						0.45				0.00				0.00				0.00	11.32														

Definitions:
Q = 2.78 AIR, where
Q = Peak Flow in Litres per second (L/s)
A = Areas in hectares (ha)
I = Rainfall Intensity (mm/h)
R = Runoff Coefficient

Notes:
1) Ottawa Rainfall-Intensity Curve
2) Min. Velocity = 0.80 m/s

Designed:
Checked:
Dwg. Reference:
PROJECT:
LOCATION:
City of Ottawa
File Ref:
Date: 14 Oct 2021
Sheet No. SHEET 2 OF 7

STORM SEWER CALCULATION SHEET (RATIONAL METHOD)

Local Roads Return Frequency = 2 years
Collector Roads Return Frequency = 5 years
Manning 0.013 Arterial Roads Return Frequency = 10 years

Ottawa

LOCATION			AREA (Ha)																FLOW						SEWER DATA									
			2 YEAR				5 YEAR				10 YEAR				100 YEAR				Time of	Intensity	Intensity	Intensity	Intensity	Peak Flow	DIA. (mm)	DIA. (mm)	TYPE	SLOPE	LENGTH	CAPACITY	VELOCITY	TIME OF	RATIO
			AREA	R	Indiv.	Accum.	AREA	R	Indiv.	Accum.	AREA	R	Indiv.	Accum.	AREA	R	Indiv.	Accum.	Conc.	2 Year	5 Year	10 Year	100 Year										
Location	From Node	To Node	(Ha)		2.78 AC	2.78 AC	(Ha)		2.78 AC	2.78 AC	(Ha)		2.78 AC	2.78 AC	(Ha)		2.78 AC	2.78 AC	(min)	(mm/h)	(mm/h)	(mm/h)	(mm/h)	Q (l/s)	(actual)	(nominal)		(%)	(m)	(l/s)	(m/s)	FLOW (min)	Q/Q full
	8	57	0.09	0.65	0.16	0.16			0.00	0.00			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	12	300	300	PVC	1.40	25.0	114.4179	1.6187	0.2574	0.109
To Unknown Road5 - 05, Pipe 57 - 58						0.16				0.00				0.00				0.00	10.26														
	8	9	0.12	0.65	0.22	0.22			0.00	0.00			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	17	300	300	PVC	0.35	28.5	57.2089	0.8093	0.5869	0.291
	9	10	0.21	0.65	0.38	0.60			0.00	0.00			0.00	0.00			0.00	0.00	10.59	74.62	101.19	118.61	173.37	44	300	300	PVC	0.40	59.0	61.1589	0.8652	1.1365	0.728
To Unknown Road3 - 03, Pipe 10 - 19						0.60				0.00				0.00				0.00	11.72														
Contribution From Unknown Road16 - 17, Pipe 75 - 76						9.92				1.19				0.00				0.00	18.71														
	76	77	0.20	0.65	0.36	10.28			0.00	1.19			0.00	0.00			0.00	0.00	18.71	54.21	73.22	85.70	125.07	644	975	975	CONC	0.15	57.0	867.9562	1.1625	0.8172	0.742
To Unknown Road10 - 10, Pipe 77 - 78						10.28				1.19				0.00				0.00	19.52														
Contribution From Unknown Road9 - 09, Pipe 51 - 52						9.23				3.24				0.00				0.00	20.27														
	52	54	0.10	0.65	0.18	9.41			0.00	3.24			0.00	0.00			0.00	0.00	20.27	51.60	69.66	81.51	118.93	711	1050	1050	CONC	0.15	30.0	#######	1.2214	0.4094	0.672
To Unknown Road5 - 05, Pipe 54 - 55						9.41				3.24				0.00				0.00	20.68														
Unknown Road10 - 10																																	
Contribution From Unknown Road6 - 06, Pipe 53 - 80						0.16				0.00				0.00				0.00	10.37														
Contribution From Unknown Road6 - 06, Pipe 7700 - 80						0.45				0.00				0.00				0.00	11.32														
	80	81	0.43	0.65	0.78	1.39			0.00	0.00			0.00	0.00			0.00	0.00	11.32	72.09	97.71	114.51	167.35	100	450	450	CONC	0.20	79.5	127.5033	0.8017	1.6528	0.787
	81	82	0.15	0.65	0.27	1.66			0.00	0.00			0.00	0.00			0.00	0.00	12.97	67.01	90.74	106.31	155.30	111	450	450	CONC	0.25	14.0	142.5531	0.8963	0.2603	0.781
To Unknown Road8 - 08, Pipe 82 - 83						1.66				0.00				0.00				0.00	13.23														
Contribution From Unknown Road6 - 06, Pipe 76 - 77						10.28				1.19				0.00				0.00	19.52														
	77	78	0.43	0.65	0.78	11.06			0.00	1.19			0.00	0.00			0.00	0.00	19.52	52.81	71.31	83.46	121.78	669	975	975	CONC	0.15	78.0	867.9562	1.1625	1.1183	0.770
	78	79	0.12	0.65	0.22	11.28			0.00	1.19			0.00	0.00			0.00	0.00	20.64	51.02	68.87	80.59	117.57	657	975	975	CONC	0.15	12.5	867.9562	1.1625	0.1792	0.757
	79	83	0.11	0.65	0.20	11.47			0.00	1.19			0.00	0.00			0.00	0.00	20.82	50.75	68.50	80.15	116.93	664	975	975	CONC	0.15	31.0	867.9562	1.1625	0.4444	0.765
To Unknown Road12 - 12, Pipe 83 - 84						11.47				1.19				0.00				0.00	21.27														
Unknown Road12 - 12																																	
Contribution From Unknown Road10 - 10, Pipe 79 - 83						11.47				1.19				0.00				0.00	21.27														
Contribution From Unknown Road8 - 08, Pipe 82 - 83						1.75				0.00				0.00				0.00	13.46														
	83	84	0.01	0.65	0.02	13.25			0.00	1.19			0.00	0.00			0.00	0.00	21.27	50.08	67.59	79.08	115.36	744	975	975	CONC	0.20	26.5	#######	1.3424	0.3290	0.742
Unknown Road25 - 26																																	
Contribution From Unknown Road3 - 03, Pipe 10200 - 111						0.00				0.02				0.00				0.00	10.28														
	111	112	0.15	0.65	0.27	0.27			0.00	0.02			0.00	0.00			0.00	0.00	10.28	75.75	102.75	120.44	176.06	22	300	300	PVC	0.35	55.0	57.2089	0.8093	1.1326	0.391
	112	115	0.15	0.65	0.27	0.54			0.00	0.02			0.00	0.00			0.00	0.00	11.41	71.78	97.29	114.01	166.62	41	375	375	PVC	0.30	57.0	96.0323	0.8695	1.0926	0.424
To Unknown Road21 - 22, Pipe 115 - 116						0.54				0.02				0.00				0.00	12.50														
Unknown Road23 - 24																																	
Contribution From Unknown Road3 - 03, Pipe 11100 - 110						0.00				0.34				0.00				0.00	10.90														
	110	114	0.39	0.65	0.70	0.70			0.00	0.34			0.00	0.00			0.00	0.00	10.90	73.53	99.69	116.84	170.76	86	450	450	CONC	0.20	99.5	127.5033	0.8017	2.0685	0.675
To Unknown Road21 - 22, Pipe 114 - 115						0.70				0.34				0.00				0.00	12.96														
Unknown Road26 - 27																																	
	11200	105	0.50	0.65	0.90	0.90			0.00	0.00			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	69	450	450	CONC	0.20	98.5	127.5033	0.8017	2.0478	0.544
To Unknown Road21 - 22, Pipe 105 - 106						0.90				0.00				0.00				0.00	12.05														
Unknown Road24 - 25																																	
	91	68	0.41	0.65	0.74	0.74			0.00	0.00			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	57	375	375	PVC	0.30	79.5	96.0323	0.8695	1.5239	0.593
To Unknown Road16 - 17, Pipe 68 - 73						0.74				0.00				0.00				0.00	11.52														
	91	92	0.12	0.65	0.22	0.22			0.00	0.00			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	17	300	300	PVC	0.35	30.5	57.2089	0.8093	0.6281	0.291
To Unknown Road15 - 16, Pipe 92 - 94						0.22				0.00				0.00				0.00	10.63														
Unknown Road15 - 16																																	
	31	64	0.06	0.65	0.11	0.11			0.00	0.00			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	8	300	300	PVC	1.35	9.0	112.3561	1.5895	0.0944	0.074
	64	65	0.19	0.65	0.34	0.45			0.00	0.00			0.00	0.00			0.00	0.00	10.09	76.44	103.70	121.56	177.70	35	300	300	PVC	0.35	50.0	57.2089	0.8093	1.0296	0.604
To Unknown Road16 - 17, Pipe 65 - 66						0.45				0.00				0.00				0.00	11.12														

Definitions:
Q = 2.78 AIR, where
Q = Peak Flow in Litres per second (L/s)
A = Areas in hectares (ha)
I = Rainfall Intensity (mm/h)
R = Runoff Coefficient

Notes:
1) Ottawa Rainfall-Intensity Curve
2) Min. Velocity = 0.80 m/s

Designed:	PROJECT:
Checked:	LOCATION: City of Ottawa
Dwg. Reference:	File Ref: / Date: 14 Oct 2021 / Sheet No. SHEET 3 OF 7

STORM SEWER CALCULATION SHEET (RATIONAL METHOD)

Local Roads Return Frequency = 2 years
Collector Roads Return Frequency = 5 years
Manning 0.013 Arterial Roads Return Frequency = 10 years

Ottawa

LOCATION			AREA (Ha)																FLOW						SEWER DATA									
			2 YEAR				5 YEAR				10 YEAR				100 YEAR				Time of Conc.	Intensity 2 Year	Intensity 5 Year	Intensity 10 Year	Intensity 100 Year	Peak Flow	DIA. (mm)	DIA. (mm)	TYPE	SLOPE	LENGTH	CAPACITY	VELOCITY	TIME OF	RATIO
Location	From Node	To Node	AREA (Ha)	R	Indiv. 2.78 AC	Accum. 2.78 AC	AREA (Ha)	R	Indiv. 2.78 AC	Accum. 2.78 AC	AREA (Ha)	R	Indiv. 2.78 AC	Accum. 2.78 AC	AREA (Ha)	R	Indiv. 2.78 AC	Accum. 2.78 AC	(min)	(mm/h)	(mm/h)	(mm/h)	(mm/h)	Q (l/s)	(actual)	(nominal)		(%)	(m)	(l/s)	(m/s)	LOW (min)	Q/Q full
	85	63	0.04	0.65	0.07	0.07			0.00	0.00			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	6	300	300	PVC	0.35	10.5	57.2089	0.8093	0.2162	0.097
	63	65	0.24	0.65	0.43	0.51			0.00	0.00			0.00	0.00			0.00	0.00	10.22	75.98	103.06	120.81	176.61	38	300	300	PVC	0.35	67.0	57.2089	0.8093	1.3797	0.672
To Unknown Road16 - 17, Pipe 65 - 66						0.51				0.00				0.00				0.00	11.60														
	90000	92	0.22	0.65	0.40	0.40			0.00	0.00			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	31	300	300	PVC	0.35	58.5	57.2089	0.8093	1.2047	0.534
Contribution From Unknown Road24 - 25, Pipe 91 - 92						0.22				0.00				0.00				0.00	10.63														
	92	94	0.21	0.65	0.38	0.99			0.00	0.00			0.00	0.00			0.00	0.00	11.20	72.47	98.23	115.12	168.25	72	375	375	PVC	0.30	65.0	96.0323	0.8695	1.2459	0.750
To Unknown Road14 - 14, Pipe 94 - 101						0.99				0.00				0.00				0.00	12.45														
	85	86	0.20	0.65	0.36	0.36			0.00	0.00			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	28	300	300	PVC	0.35	50.0	57.2089	0.8093	1.0296	0.485
	86	87	0.12	0.65	0.22	0.58			0.00	0.00			0.00	0.00			0.00	0.00	11.03	73.07	99.05	116.09	169.66	42	300	300	PVC	0.35	9.5	57.2089	0.8093	0.1956	0.739
			0.11	0.65	0.20	0.78			0.00	0.00			0.00	0.00			0.00	0.00															
	87	88			0.00	0.78	0.63	0.40	0.70	0.70			0.00	0.00			0.00	0.00	11.23	72.40	98.14	115.01	168.08	125	450	450	CONC	0.30	27.0	156.1591	0.9819	0.4583	0.801
	88	89	0.02	0.65	0.04	0.81			0.00	0.70			0.00	0.00			0.00	0.00	11.68	70.89	96.07	112.57	164.51	125	450	450	CONC	0.30	13.0	156.1591	0.9819	0.2207	0.800
	89	90	0.11	0.65	0.20	1.01			0.00	0.70			0.00	0.00			0.00	0.00	11.90	70.19	95.11	111.44	162.84	138	600	600	CONC	0.15	50.0	237.8056	0.8411	0.9908	0.579
To Unknown Road22 - 23, Pipe 90 - 67						1.01				0.70				0.00				0.00	12.90														
	31	32	0.16	0.65	0.29	0.29			0.00	0.00			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	22	300	300	PVC	0.35	37.0	57.2089	0.8093	0.7619	0.388
	32	33	0.15	0.65	0.27	0.56			0.00	0.00			0.00	0.00			0.00	0.00	10.76	74.00	100.33	117.60	171.88	41	300	300	PVC	0.35	40.0	57.2089	0.8093	0.8237	0.725
	33	34	0.03	0.65	0.05	0.61			0.00	0.00			0.00	0.00			0.00	0.00	11.59	71.21	96.50	113.08	165.26	44	300	300	PVC	0.35	10.5	57.2089	0.8093	0.2162	0.765
	34	35	0.32	0.65	0.58	1.19			0.00	0.00			0.00	0.00			0.00	0.00	11.80	70.52	95.55	111.96	163.61	84	450	450	CONC	0.20	77.0	127.5033	0.8017	1.6008	0.660
	35	36	0.39	0.65	0.70	1.90			0.00	0.00			0.00	0.00			0.00	0.00	13.40	65.81	89.10	104.37	152.46	125	600	600	CONC	0.15	77.0	237.8056	0.8411	1.5258	0.525
Contribution From Unknown Road22 - 23, Pipe 4000 - 36						0.11				0.00				0.00				0.00	10.92														
	36	37	0.30	0.65	0.54	2.55			0.00	0.00			0.00	0.00			0.00	0.00	14.93	61.94	83.79	98.12	143.29	158	600	600	CONC	0.15	61.5	237.8056	0.8411	1.2187	0.664
	37	44	0.28	0.65	0.51	3.05			0.00	0.00			0.00	0.00			0.00	0.00	16.15	59.19	80.03	93.70	136.80	181	600	600	CONC	0.15	61.5	237.8056	0.8411	1.2187	0.760
To Unknown Road14 - 14, Pipe 44 - 47						3.05				0.00				0.00				0.00	17.37														
Unknown Road14 - 14																																	
	93	73	0.44	0.65	0.80	0.80			0.00	0.00			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	61	375	375	PVC	0.30	81.5	96.0323	0.8695	1.5622	0.636
To Unknown Road16 - 17, Pipe 73 - 75						0.80				0.00				0.00				0.00	11.56														
	93	94	0.15	0.65	0.27	0.27			0.00	0.00			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	21	300	300	PVC	1.20	28.5	105.9304	1.4986	0.3170	0.197
Contribution From Unknown Road15 - 16, Pipe 92 - 94						0.99				0.00				0.00				0.00	12.45														
	94	101	0.15	0.65	0.27	1.54			0.00	0.00			0.00	0.00			0.00	0.00	12.45	68.52	92.81	108.74	158.88	105	450	450	CONC	0.25	44.0	142.5531	0.8963	0.8182	0.738
To Unknown Road27 - 28, Pipe 101 - 102						1.54				0.00				0.00				0.00	13.27														
	42	72	0.09	0.65	0.16	0.16			0.00	0.00			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	12	300	300	PVC	0.85	22.0	89.1537	1.2613	0.2907	0.140
Contribution From Unknown Road20 - 21, Pipe 71 - 72						2.17				0.00				0.00				0.00	15.93														
	72	73	0.16	0.65	0.29	2.62			0.00	0.00			0.00	0.00			0.00	0.00	15.93	59.65	80.66	94.45	137.90	156	600	600	CONC	0.15	45.0	237.8056	0.8411	0.8917	0.657
To Unknown Road16 - 17, Pipe 73 - 75						2.62				0.00				0.00				0.00	16.82														
	95	96	0.19	0.65	0.34	0.34			0.00	0.00			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	26	300	300	PVC	0.35	44.5	57.2089	0.8093	0.9164	0.461
	96	97	0.12	0.65	0.22	0.56			0.00	0.00			0.00	0.00			0.00	0.00	10.92	73.46	99.59	116.72	170.59	41	375	375	PVC	0.30	13.0	96.0323	0.8695	0.2492	0.428
	97	98	0.40	0.65	0.72	1.28			0.00	0.00			0.00	0.00			0.00	0.00	11.17	72.60	98.41	115.34	168.56	93	450	450	CONC	0.20	64.0	127.5033	0.8017	1.3305	0.731
	98	99	0.40	0.65	0.72	2.01			0.00	0.00			0.00	0.00			0.00	0.00	12.50	68.39	92.63	108.53	158.56	137	525	525	CONC	0.20	64.0	192.3297	0.8885	1.2006	0.713
	99	100	0.13	0.65	0.23	2.24			0.00	0.00			0.00	0.00			0.00	0.00	13.70	65.03	88.02	103.10	150.60	146	525	525	CONC	0.20	13.0	192.3297	0.8885	0.2439	0.758
	100	101	0.03	0.65	0.05	2.29			0.00	0.00			0.00	0.00			0.00	0.00	13.94	64.39	87.14	102.07	149.09	148	525	525	CONC	0.20	8.0	192.3297	0.8885	0.1501	0.768
To Unknown Road27 - 28, Pipe 101 - 102						2.29				0.00				0.00				0.00	14.09														
	42	43	0.08	0.65	0.14	0.14			0.00	0.00			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	11	300	300	PVC	0.35	22.0	57.2089	0.8093	0.4530	0.194
Contribution From Unknown Road17 - 18, Pipe 41 - 43						2.15				0.00				0.00				0.00	15.77														
	43	44	0.17	0.65	0.31	2.60			0.00	0.00			0.00	0.00			0.00	0.00	15.77	60.00	81.14	95.01	138.73	156	600	600	CONC	0.15	45.0	237.8056	0.8411	0.8917	0.657
Contribution From Unknown Road15 - 16, Pipe 37 - 44						3.05				0.00				0.00				0.00	17.37														
	44	47	0.21	0.65	0.38	6.04			0.00	0.00			0.00	0.00			0.00	0.00	17.37	56.69	76.62	89.69	130.92	342	750	750	CONC	0.15	62.0	431.1703	0.9760	1.0588	0.794
To Unknown Road3 - 03, Pipe 47 - 48						6.04				0.00				0.00				0.00	18.42														

Definitions:
Q = 2.78 AIR, where
Q = Peak Flow in Litres per second (L/s)
A = Areas in hectares (ha)
I = Rainfall Intensity (mm/h)
R = Runoff Coefficient

Notes:
1) Ottawa Rainfall-Intensity Curve
2) Min. Velocity = 0.80 m/s

Designed:	PROJECT:	
Checked:	LOCATION: City of Ottawa	
Dwg. Reference:	File Ref:	Date: 14 Oct 2021 · Sheet No. SHEET 4 OF 7

STORM SEWER CALCULATION SHEET (RATIONAL METHOD)

Local Roads Return Frequency = 2 years
Collector Roads Return Frequency = 5 years
Manning 0.013 Arterial Roads Return Frequency = 10 years

Ottawa

LOCATION			AREA (Ha)																FLOW						SEWER DATA								
			2 YEAR				5 YEAR				10 YEAR				100 YEAR				Time of	Intensity	Intensity	Intensity	Intensity	Peak Flow	DIA. (mm)	DIA. (mm)	TYPE	SLOPE	LENGTH	CAPACITY	VELOCITY	TIME OF	RATIO
			AREA	R	Indiv.	Accum.	AREA	R	Indiv.	Accum.	AREA	R	Indiv.	Accum.	AREA	R	Indiv.	Accum.	Conc.	2 Year	5 Year	10 Year	100 Year										
Location	From Node	To Node	(Ha)		2.78 AC	2.78 AC	(Ha)		2.78 AC	2.78 AC	(Ha)		2.78 AC	2.78 AC	(Ha)		2.78 AC	2.78 AC	(min)	(mm/h)	(mm/h)	(mm/h)	(mm/h)	Q (l/s)	(actual)	(nominal)		(%)	(m)	(l/s)	(m/s)	LOW (min	Q/Q full
Unknown Road27 - 28																																	
Contribution From Unknown Road14 - 14, Pipe 100 - 101						2.29				0.00				0.00				0.00	14.09														
Contribution From Unknown Road14 - 14, Pipe 94 - 101						1.54				0.00				0.00				0.00	13.27														
	101	102	0.05	0.65	0.09	3.92			0.00	0.00			0.00	0.00			0.00	0.00	14.09	64.00	86.62	101.45	148.17	251	675	675	CONC	0.15	62.0	325.5584	0.9098	1.1358	0.771
To Unknown Road3 - 03, Pipe 102 - 104						3.92				0.00				0.00				0.00	15.23														
Unknown Road21 - 22																																	
	11300	114	0.12	0.65	0.22	0.22			0.00	0.00			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	17	450	450	CONC	0.20	45.0	127.5033	0.8017	0.9355	0.131
Contribution From Unknown Road23 - 24, Pipe 110 - 114						0.70				0.34				0.00				0.00	12.96														
	114	115	0.17	0.65	0.31	1.23			0.00	0.34			0.00	0.00			0.00	0.00	12.96	67.03	90.77	106.34	155.35	114	525	525	CONC	0.20	45.0	192.3297	0.8885	0.8442	0.590
Contribution From Unknown Road25 - 26, Pipe 112 - 115						0.54				0.02				0.00				0.00	12.50														
	115	116	0.49	0.65	0.89	2.66			0.00	0.36			0.00	0.00			0.00	0.00	13.81	64.73	87.62	102.63	149.90	204	600	600	CONC	0.20	88.0	274.5943	0.9712	1.5102	0.741
To Unknown Road28 - 29, Pipe 116 - 122						2.66				0.36				0.00				0.00	15.32														
Contribution From Unknown Road3 - 03, Pipe 102 - 104						3.92				0.89				0.00				0.00	16.65														
Contribution From Unknown Road3 - 03, Pipe 103 - 104						0.00				0.23				0.00				0.00	10.32														
	104	105	0.18	0.65	0.33	4.25			0.00	1.12			0.00	0.00			0.00	0.00	16.65	58.12	78.57	91.99	134.29	335	825	825	CONC	0.15	55.0	555.9418	1.0400	0.8814	0.602
Contribution From Unknown Road26 - 27, Pipe 11200 - 105						0.90				0.00				0.00				0.00	12.05														
	105	106	0.21	0.65	0.38	5.53			0.00	1.12			0.00	0.00			0.00	0.00	17.53	56.37	76.17	89.17	130.16	397	825	825	CONC	0.15	51.5	555.9418	1.0400	0.8253	0.714
	106	107	0.13	0.65	0.23	5.76			0.00	1.12			0.00	0.00			0.00	0.00	18.36	54.83	74.07	86.70	126.53	399	825	825	CONC	0.15	9.5	555.9418	1.0400	0.1522	0.718
	107	116	0.03	0.65	0.05	5.82			0.00	1.12			0.00	0.00			0.00	0.00	18.51	54.56	73.70	86.26	125.89	400	825	825	CONC	0.15	6.0	555.9418	1.0400	0.0962	0.720
To Unknown Road28 - 29, Pipe 116 - 122						5.82				1.12				0.00				0.00	18.61														
Unknown Road28 - 29																																	
Contribution From Unknown Road21 - 22, Pipe 107 - 116						5.82				1.12				0.00				0.00	18.61														
Contribution From Unknown Road21 - 22, Pipe 115 - 116						2.66				0.36				0.00				0.00	15.32														
	116	122	0.05	0.65	0.09	8.57			0.00	1.48			0.00	0.00			0.00	0.00	18.61	54.38	73.46	85.99	125.49	575	900	900	CONC	0.16	67.5	724.1245	1.1383	0.9884	0.794
To Unknown Road16 - 17, Pipe 122 - 124						8.57				1.48				0.00				0.00	19.60														
Unknown Road3 - 03																																	
	10200	111			0.00	0.00	0.01	0.65	0.02	0.02			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	2	300	300	PVC	0.35	13.5	57.2089	0.8093	0.2780	0.033
To Unknown Road25 - 26, Pipe 111 - 112						0.00				0.02				0.00				0.00	10.28														
	103	104			0.00	0.00	0.13	0.65	0.23	0.23			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	24	300	300	PVC	1.45	32.0	116.4431	1.6473	0.3238	0.210
To Unknown Road21 - 22, Pipe 104 - 105						0.00				0.23				0.00				0.00	10.32														
	108	75			0.00	0.00	0.06	0.65	0.11	0.11			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	11	300	300	PVC	0.35	21.5	57.2089	0.8093	0.4427	0.197
To Unknown Road16 - 17, Pipe 75 - 76						0.00				0.11				0.00				0.00	10.44														
	108	109			0.00	0.00	0.11	0.65	0.20	0.20			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	21	300	300	PVC	0.35	26.5	57.2089	0.8093	0.5457	0.362
To Unknown Road19 - 20, Pipe 109 - 113						0.00				0.20				0.00				0.00	10.55														
	11000	109			0.00	0.00	0.17	0.65	0.31	0.31			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	32	375	375	PVC	0.30	43.5	96.0323	0.8695	0.8338	0.333
To Unknown Road19 - 20, Pipe 109 - 113						0.00				0.31				0.00				0.00	10.83														
	11100	110			0.00	0.00	0.19	0.65	0.34	0.34			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	36	300	300	PVC	0.35	43.5	57.2089	0.8093	0.8958	0.625
To Unknown Road23 - 24, Pipe 110 - 114						0.00				0.34				0.00				0.00	10.90														
	74	75	0.44	0.65	0.80	0.80			0.00	0.00			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	61	375	375	PVC	0.30	78.0	96.0323	0.8695	1.4951	0.636
To Unknown Road16 - 17, Pipe 75 - 76						0.80				0.00				0.00				0.00	11.50														
	74	49	0.67	0.65	1.21	1.21			0.00	0.00			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	93	450	450	CONC	0.20	107.5	127.5033	0.8017	2.2349	0.729
	49	50	0.06	0.65	0.11	1.32			0.00	0.00			0.00	0.00			0.00	0.00	12.23	69.17	93.70	109.79	160.42	91	450	450	CONC	0.20	13.0	127.5033	0.8017	0.2703	0.716
To Unknown Road9 - 09, Pipe 50 - 51						1.32				0.00				0.00				0.00	12.51														
Contribution From Unknown Road27 - 28, Pipe 101 - 102						3.92				0.00				0.00				0.00	15.23														
	102	104			0.00	3.92	0.49	0.65	0.89	0.89			0.00	0.00			0.00	0.00	15.23	61.24	82.83	97.00	141.64	313	750	750	CONC	0.15	83.5	431.1703	0.9760	1.4259	0.727
To Unknown Road21 - 22, Pipe 104 - 105						3.92				0.89				0.00				0.00	16.65														

Definitions:
Q = 2.78 AIR, where
Q = Peak Flow in Litres per second (L/s)
A = Areas in hectares (ha)
I = Rainfall Intensity (mm/h)
R = Runoff Coefficient

Notes:
1) Ottawa Rainfall-Intensity Curve
2) Min. Velocity = 0.80 m/s

Designed:
PROJECT:
Checked:
LOCATION: City of Ottawa
Dwg. Reference:
File Ref:
Date: 14 Oct 2021
Sheet No. SHEET 5 OF 7

STORM SEWER CALCULATION SHEET (RATIONAL METHOD)

Local Roads Return Frequency = 2 years
Collector Roads Return Frequency = 5 years
Manning 0.013 Arterial Roads Return Frequency = 10 years

Ottawa

LOCATION			AREA (Ha) 2 YEAR				5 YEAR				10 YEAR				100 YEAR				FLOW						SEWER DATA								
Location	From Node	To Node	AREA (Ha)	R	Indiv. 2.78 AC	Accum. 2.78 AC	AREA (Ha)	R	Indiv. 2.78 AC	Accum. 2.78 AC	AREA (Ha)	R	Indiv. 2.78 AC	Accum. 2.78 AC	AREA (Ha)	R	Indiv. 2.78 AC	Accum. 2.78 AC	Time of Conc. (min)	Intensity 2 Year (mm/h)	Intensity 5 Year (mm/h)	Intensity 10 Year (mm/h)	Intensity 100 Year (mm/h)	Peak Flow Q (l/s)	DIA. (mm) (actual)	DIA. (mm) (nominal)	TYPE	SLOPE (%)	LENGTH (m)	CAPACITY (l/s)	VELOCITY (m/s)	TIME OF FLOW (min)	RATIO Q/Q full
	1	2	0.30	0.65	0.54	0.54			0.00	0.00			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	42	300	300	PVC	0.35	73.0	57.2089	0.8093	1.5033	0.728
	2	3	0.26	0.65	0.47	1.01			0.00	0.00			0.00	0.00			0.00	0.00	11.50	71.48	96.87	113.52	165.89	72	375	375	PVC	0.30	67.0	96.0323	0.8695	1.2843	0.753
	3	4	0.12	0.65	0.22	1.23			0.00	0.00			0.00	0.00			0.00	0.00	12.79	67.54	91.46	107.15	156.54	83	375	375	PVC	0.40	10.0	110.8885	1.0040	0.1660	0.748
	4	5	0.44	0.65	0.80	2.02			0.00	0.00			0.00	0.00			0.00	0.00	12.95	67.06	90.81	106.38	155.42	136	525	525	CONC	0.20	73.0	192.3297	0.8885	1.3694	0.706
	5	6	0.46	0.65	0.83	2.86			0.00	0.00			0.00	0.00			0.00	0.00	14.32	63.41	85.81	100.50	146.78	181	600	600	CONC	0.15	82.0	237.8056	0.8411	1.6249	0.761
Contribution From Unknown Road11 - 11, Pipe 1500 - 6						0.14				0.00				0.00				0.00	11.23														
	6	7	0.30	0.65	0.54	3.54			0.00	0.00			0.00	0.00			0.00	0.00	15.95	59.62	80.61	94.39	137.82	211	600	600	CONC	0.20	54.0	274.5943	0.9712	0.9267	0.769
	7	10	0.25	0.65	0.45	3.99			0.00	0.00			0.00	0.00			0.00	0.00	16.87	57.67	77.95	91.26	133.22	230	675	675	CONC	0.15	54.5	325.5584	0.9098	0.9984	0.707
Contribution From Unknown Road6 - 06, Pipe 9 - 10						0.60				0.00				0.00				0.00	11.72														
	10	19	0.26	0.65	0.47	5.06			0.00	0.00			0.00	0.00			0.00	0.00	17.87	55.72	75.29	88.14	128.64	282	675	675	CONC	0.20	48.0	375.9224	1.0505	0.7615	0.750
Contribution From Unknown Road2 - 02, Pipe 18 - 19						3.96				0.00				0.00				0.00	17.40														
	19	29	0.21	0.65	0.38	9.40			0.00	0.00			0.00	0.00			0.00	0.00	18.63	54.34	73.40	85.91	125.37	511	750	750	CONC	0.35	64.0	658.6236	1.4908	0.7155	0.775
To Unknown Road1 - 01, Pipe 29 - 30						9.40				0.00				0.00				0.00	19.35														
	1	45	0.22	0.65	0.40	0.40			0.00	0.00			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	31	300	300	PVC	0.35	13.0	57.2089	0.8093	0.2677	0.534
	45	46	0.36	0.65	0.65	1.05			0.00	0.00			0.00	0.00			0.00	0.00	10.27	75.79	102.80	120.50	176.15	79	450	450	CONC	0.20	88.0	127.5033	0.8017	1.8295	0.623
	46	47	0.32	0.65	0.58	1.63			0.00	0.00			0.00	0.00			0.00	0.00	12.10	69.59	94.28	110.47	161.42	113	525	525	CONC	0.20	88.0	192.3297	0.8885	1.6508	0.588
Contribution From Unknown Road14 - 14, Pipe 44 - 47						6.04				0.00				0.00				0.00	18.42														
	47	48	0.08	0.65	0.14	7.81			0.00	0.00			0.00	0.00			0.00	0.00	18.42	54.71	73.91	86.51	126.25	427	825	825	CONC	0.15	48.0	555.9418	1.0400	0.7692	0.768
	48	50	0.02	0.65	0.04	7.84			0.00	0.00			0.00	0.00			0.00	0.00	19.19	53.37	72.07	84.35	123.09	419	825	825	CONC	0.15	12.5	555.9418	1.0400	0.2003	0.753
To Unknown Road9 - 09, Pipe 50 - 51						7.84				0.00				0.00				0.00	19.39														
Unknown Road19 - 20																																	
Contribution From Unknown Road3 - 03, Pipe 108 - 109						0.00				0.20				0.00				0.00	10.55														
Contribution From Unknown Road3 - 03, Pipe 11000 - 109						0.00				0.31				0.00				0.00	10.83														
	109	113	0.36	0.65	0.65	0.65			0.00	0.51			0.00	0.00			0.00	0.00	10.83	73.75	99.99	117.19	171.28	99	450	450	CONC	0.20	88.5	127.5033	0.8017	1.8399	0.773
	113	120	0.17	0.65	0.31	0.96			0.00	0.51			0.00	0.00			0.00	0.00	12.67	67.87	91.91	107.68	157.32	112	600	600	CONC	0.15	68.5	237.8056	0.8411	1.3574	0.469
To Unknown Road16 - 17, Pipe 120 - 121						0.96				0.51				0.00				0.00	14.03														
Unknown Road16 - 17																																	
	123	124			0.00	0.00	0.12	0.65	0.22	0.22			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	23	300	300	PVC	1.25	27.0	108.1147	1.5295	0.2942	0.209
To Unknown Road29 - 30, Pipe 124 - 125						0.00				0.22				0.00				0.00	10.29														
Contribution From Unknown Road15 - 16, Pipe 63 - 65						0.51				0.00				0.00				0.00	11.60														
Contribution From Unknown Road15 - 16, Pipe 64 - 65						0.45				0.00				0.00				0.00	11.12														
	65	66	0.28	0.65	0.51	1.46			0.00	0.00			0.00	0.00			0.00	0.00	11.60	71.18	96.46	113.03	165.18	104	450	450	CONC	0.25	68.5	142.5531	0.8963	1.2737	0.731
	66	67	0.38	0.65	0.69	2.15			0.00	0.00			0.00	0.00			0.00	0.00	12.87	67.30	91.14	106.77	155.98	145	525	525	CONC	0.20	88.0	192.3297	0.8885	1.6508	0.752
Contribution From Unknown Road22 - 23, Pipe 7000 - 67						0.11				0.00				0.00				0.00	10.90														
Contribution From Unknown Road22 - 23, Pipe 90 - 67						1.97				0.70				0.00				0.00	14.88														
	67	68	0.15	0.65	0.27	4.50			0.00	0.70			0.00	0.00			0.00	0.00	14.88	62.05	83.94	98.30	143.55	338	750	750	CONC	0.15	58.5	431.1703	0.9760	0.9990	0.784
Contribution From Unknown Road24 - 25, Pipe 91 - 68						0.74				0.00				0.00				0.00	11.52														
	68	73	0.16	0.65	0.29	5.53			0.00	0.70			0.00	0.00			0.00	0.00	15.88	59.76	80.81	94.62	138.16	387	825	825	CONC	0.15	64.5	555.9418	1.0400	1.0337	0.696
Contribution From Unknown Road14 - 14, Pipe 72 - 73						2.62				0.00				0.00				0.00	16.82														
Contribution From Unknown Road14 - 14, Pipe 93 - 73						0.80				0.00				0.00				0.00	11.56														
	73	75	0.10	0.65	0.18	9.13			0.00	0.70			0.00	0.00			0.00	0.00	16.92	57.59	77.84	91.13	133.03	580	975	975	CONC	0.15	63.0	867.9562	1.1625	0.9032	0.668
Contribution From Unknown Road3 - 03, Pipe 108 - 75						0.00				0.11				0.00				0.00	10.44														
Contribution From Unknown Road3 - 03, Pipe 74 - 75						0.80				0.00				0.00				0.00	11.50														
	75	76			0.00	9.92	0.21	0.65	0.38	1.19			0.00	0.00			0.00	0.00	17.82	55.83	75.43	88.30	128.88	643	975	975	CONC	0.15	62.0	867.9562	1.1625	0.8889	0.741
To Unknown Road6 - 06, Pipe 76 - 77						9.92				1.19				0.00				0.00	18.71														
	117	118			0.00	0.00	0.45	0.65	0.81	0.81			0.00	0.00			0.00	0.00	10.00	76.81	104.19	122.14	178.56	85	450	450	CONC	0.20	73.5	127.5033	0.8017	1.5280	0.664
	118	119			0.00	0.00	0.13	0.65	0.23	1.05			0.00	0.00			0.00	0.00	11.53	71.40	96.76	113.39	165.70	101	525	525	CONC	0.20	10.5	192.3297	0.8885	0.1970	0.527
	119	120			0.00	0.00	0.17	0.65	0.31	1.36			0.00	0.00			0.00	0.00	11.72	70.76	95.89	112.36	164.19	130	600	600	CONC	0.15	39.5	237.8056	0.8411	0.7827	0.546
Contribution From Unknown Road19 - 20, Pipe 113 - 120						0.96				0.51				0.00				0.00	14.03														
	120	121			0.00	0.96	0.53	0.65	0.96	2.82			0.00	0.00			0.00	0.00	14.03	64.15	86.82	101.69	148.53	306	750	750	CONC	0.15	84.0	431.1703	0.9760	1.4345	0.710
	121	122			0.00	0.96	0.71	0.65	1.28	4.10			0.00	0.00			0.00	0.00	15.47	60.69	82.08	96.12	140.35	395	825	825	CONC	0.15	98.5	555.9418	1.0400	1.5785	0.710

Definitions:
Q = 2.78 AIR, where
Q = Peak Flow in Litres per second (L/s)
A = Areas in hectares (ha)
I = Rainfall Intensity (mm/h)
R = Runoff Coefficient

Notes:
1) Ottawa Rainfall-Intensity Curve
2) Min. Velocity = 0.80 m/s

Designed:	PROJECT:		
Checked:	LOCATION: City of Ottawa		
Dwg. Reference:	File Ref:	Date: 14 Oct 2021	Sheet No. SHEET 6 OF 7

STORM SEWER CALCULATION SHEET (RATIONAL METHOD)

Manning 0.013

Local Roads Return Frequency = 2 years
Collector Roads Return Frequency = 5 years
Arterial Roads Return Frequency = 10 years

LOCATION			AREA (Ha)																FLOW						SEWER DATA									
			2 YEAR				5 YEAR				10 YEAR				100 YEAR				Time of Conc.	Intensity 2 Year	Intensity 5 Year	Intensity 10 Year	Intensity 100 Year	Peak Flow	DIA. (mm)	DIA. (mm)	TYPE	SLOPE	LENGTH	CAPACITY	VELOCITY	TIME OF FLOW (min)	RATIO
Location	From Node	To Node	AREA (Ha)	R	Indiv. 2.78 AC	Accum. 2.78 AC	AREA (Ha)	R	Indiv. 2.78 AC	Accum. 2.78 AC	AREA (Ha)	R	Indiv. 2.78 AC	Accum. 2.78 AC	AREA (Ha)	R	Indiv. 2.78 AC	Accum. 2.78 AC	(min)	(mm/h)	(mm/h)	(mm/h)	(mm/h)	Q (l/s)	(actual)	(nominal)		(%)	(m)	(l/s)	(m/s)		Q/Q full
Contribution From Unknown Road28 - 29, Pipe 116 - 122						8.57				1.48				0.00				0.00	19.60														
	122	124			0.00	9.52	0.06	0.65	0.11	5.69			0.00	0.00			0.00	0.00	19.60	52.69	71.15	83.27	121.50	907	975	975	CONC	0.23	17.0	#######	1.4395	0.1968	0.844
To Unknown Road29 - 30, Pipe 124 - 125						9.52				5.69				0.00				0.00	19.79														
Unknown Road29 - 30																																	
Contribution From Unknown Road16 - 17, Pipe 122 - 124						9.52				5.69				0.00				0.00	19.79														
Contribution From Unknown Road16 - 17, Pipe 123 - 124						0.00				0.22				0.00				0.00	10.29														
	124	125	0.16	0.65	0.29	9.81			0.00	5.91			0.00	0.00			0.00	0.00	19.79	52.37	70.71	82.75	120.74	932	1050	1050	CONC	0.19	34.5	#######	1.3746	0.4183	0.783
	125	126	0.20	0.65	0.36	10.17			0.00	5.91			0.00	0.00			0.00	0.00	20.21	51.69	69.79	81.67	119.16	938	1050	1050	CONC	0.19	35.0	#######	1.3746	0.4244	0.788

Definitions:
Q = 2.78 AIR, where
Q = Peak Flow in Litres per second (L/s)
A = Areas in hectares (ha)
I = Rainfall Intensity (mm/h)
R = Runoff Coefficient

Notes:
1) Ottawa Rainfall-Intensity Curve
2) Min. Velocity = 0.80 m/s

Designed:	PROJECT:		
Checked:	LOCATION: City of Ottawa		
Dwg. Reference:	File Ref:	Date: 14 Oct 2021	Sheet No. SHEET 7 OF 7

Ottawa. ON
Paris. ON
Gatineau. QC
Montréal. QC
Québec. QC

Attachment B

PCSWMM Model Input Files

```
[TITLE]
;;Project Title/Notes

[OPTIONS]
;;Option             Value
FLOW_UNITS           LPS
INFILTRATION         HORTON
FLOW_ROUTING         DYNWAVE
LINK_OFFSETS         ELEVATION
MIN_SLOPE            0
ALLOW_PONDING        NO
SKIP_STEADY_STATE    NO

START_DATE           10/13/2021
START_TIME           00:00:00
REPORT_START_DATE    10/13/2021
REPORT_START_TIME    00:00:00
END_DATE             10/14/2021
END_TIME             00:00:00
SWEEP_START          01/01
SWEEP_END            12/31
DRY_DAYS             0
REPORT_STEP          00:01:00
WET_STEP             00:05:00
DRY_STEP             00:05:00
ROUTING_STEP         5
RULE_STEP            00:00:00

INERTIAL_DAMPING     PARTIAL
NORMAL_FLOW_LIMITED  BOTH
FORCE_MAIN_EQUATION  H-W
VARIABLE_STEP        0.75
LENGTHENING_STEP     0
MIN_SURFAREA         0
MAX_TRIALS           8
HEAD_TOLERANCE       0.0015
SYS_FLOW_TOL         5
LAT_FLOW_TOL         5
MINIMUM_STEP         0.5
THREADS              6

[FILES]
;;Interfacing Files
USE HOTSTART "C:\OneDrive\J.F. Sabourin and Associates Inc\JFSA-OTTAWA-
SERVER - Documents\PROJ\1474(03)\202110-BCDC Phase 3 - Detailed
Design\Design\PCSWMM\202110-BCDC-Phase 3-Storm Sewer HGL\HotStart\BCDC-
P3_HGL_v01-5YrDev-100YrJock.HSF"

[EVAPORATION]
;;Data Source    Parameters
;;-------------- ----------------
CONSTANT         0.0
DRY_ONLY         NO
```

```
[JUNCTIONS]
;;Name           Elevation  MaxDepth   InitDepth  SurDepth   Aponded
;;-------------- ---------- ---------- ---------- ---------- ----------
MH-1             91.419     2.421      0          0          0
MH-10            90.62      2.6        0          0          0
MH-100           90.705     2.225      0          0          0
MH-101           90.539     2.381      0          0          0
MH-102           90.371     2.459      0          0          0
MH-10200         91.05      1.78       0          0          0
MH-103           91.16      2.08       0          0          0
MH-104           90.171     2.639      0          0          0
MH-105           90.068     2.662      0          0          0
MH-106           89.961     2.689      0          0          0
MH-107           89.887     2.743      0          0          0
MH-108           90.867     2.213      0          0          0
MH-109           90.726     1.954      0          0          0
MH-11            91.82      1.87       0          0          0
MH-110           90.718     2.032      0          0          0
MH-11000         90.932     1.808      0          0          0
MH-111           90.943     1.877      0          0          0
MH-11100         91.02      1.79       0          0          0
MH-112           90.675     2.095      0          0          0
MH-11200         90.64      2.12       0          0          0
MH-113           90.529     2.011      0          0          0
MH-11300         90.609     1.931      0          0          0
MH-114           90.444     2.156      0          0          0
MH-115           90.279     2.391      0          0          0
MH-116           89.803     2.817      0          0          0
MH-117           90.829     2.111      0          0          0
MH-118           90.578     1.942      0          0          0
MH-119           90.471     2.039      0          0          0
MH-12            91.666     1.994      0          0          0
MH-120           90.167     2.283      0          0          0
MH-121           89.966     2.604      0          0          0
MH-122           89.593     2.937      0          0          0
MH-123           90.591     2.279      0          0          0
MH-124           89.475     3.025      0          0          0
MH-125           89.403     3.047      0          0          0
MH-13            91.444     2.206      0          0          0
MH-14            91.194     2.346      0          0          0
MH-15            90.99      2.46       0          0          0
MH-1500          91.413     2.037      0          0          0
MH-16            90.879     2.481      0          0          0
MH-17            90.713     2.537      0          0          0
MH-18            90.606     2.624      0          0          0
MH-19            90.449     2.701      0          0          0
MH-2             91.69      2.04       0          0          0
MH-20            91.708     1.972      0          0          0
MH-21            91.432     2.148      0          0          0
MH-22            91.156     2.324      0          0          0
MH-23            90.927     2.463      0          0          0
MH-24            90.733     2.527      0          0          0
MH-25            90.599     2.601      0          0          0
MH-26            90.426     2.714      0          0          0
```

MH-27	90.706	2.444	0	0	0
MH-28	90.651	2.479	0	0	0
MH-29	90.15	2.9	0	0	0
MH-3	91.459	2.171	0	0	0
MH-31	91.776	2.004	0	0	0
MH-32	91.815	1.945	0	0	0
MH-3200	91.967	1.803	0	0	0
MH-33	91.645	2.065	0	0	0
MH-34	91.458	2.232	0	0	0
MH-35	91.154	2.426	0	0	0
MH-36	91.018	2.442	0	0	0
MH-37	90.906	2.464	0	0	0
MH-38	91.471	2.189	0	0	0
MH-39	91.436	2.124	0	0	0
MH-4	91.269	2.351	0	0	0
MH-40	91.223	2.307	0	0	0
MH-4000	91.474	2.046	0	0	0
MH-41	91.08	2.36	0	0	0
MH-42	91.172	2.208	0	0	0
MH-43	90.882	2.468	0	0	0
MH-44	90.664	2.616	0	0	0
MH-45	91.223	2.277	0	0	0
MH-46	90.972	2.348	0	0	0
MH-47	90.496	2.694	0	0	0
MH-48	90.394	2.726	0	0	0
MH-49	90.776	2.344	0	0	0
MH-5	91.048	2.462	0	0	0
MH-50	90.3	2.79	0	0	0
MH-51	90.205	2.875	0	0	0
MH-52	90.02	2.98	0	0	0
MH-5200	90.889	2.111	0	0	0
MH-53	90.724	2.276	0	0	0
MH-54	89.915	3.035	0	0	0
MH-55	89.75	3.07	0	0	0
MH-56	89.703	3.107	0	0	0
MH-57	90.695	2.255	0	0	0
MH-58	90.483	2.397	0	0	0
MH-59	90.323	2.487	0	0	0
MH-6	90.905	2.475	0	0	0
MH-60	90.262	2.538	0	0	0
MH-61	89.605	3.165	0	0	0
MH-63	91.684	1.926	0	0	0
MH-64	91.624	2.036	0	0	0
MH-6400	91.794	1.796	0	0	0
MH-65	91.299	2.221	0	0	0
MH-66	91.053	2.367	0	0	0
MH-67	90.652	2.638	0	0	0
MH-68	90.489	2.711	0	0	0
MH-69	91.282	2.208	0	0	0
MH-7	90.722	2.578	0	0	0
MH-70	91.026	2.334	0	0	0
MH-7000	91.254	2.116	0	0	0
MH-71	90.883	2.377	0	0	0
MH-72	90.685	2.515	0	0	0

```
MH-73            90.242     2.868      0          0          0
MH-74            90.951     2.319      0          0          0
MH-75            90.117     2.893      0          0          0
MH-76            89.964     2.956      0          0          0
MH-77            89.818     3.002      0          0          0
MH-7700          90.769     2.061      0          0          0
MH-78            89.671     3.039      0          0          0
MH-79            89.622     3.068      0          0          0
MH-8             91.12      2.23       0          0          0
MH-80            90.395     2.405      0          0          0
MH-81            90.176     2.504      0          0          0
MH-82            90.081     2.579      0          0          0
MH-83            89.515     3.135      0          0          0
MH-85            91.751     1.879      0          0          0
MH-86            91.523     2.067      0          0          0
MH-87            91.34      2.23       0          0          0
MH-88            91.229     2.301      0          0          0
MH-89            91.04      2.48       0          0          0
MH-9             91.231     2.079      0          0          0
MH-90            90.89      2.56       0          0          0
MH-9000          90.942     2.358      0          0          0
MH-90000         91.424     2.026      0          0          0
MH-91            91.178     2.132      0          0          0
MH-92            91.144     1.946      0          0          0
MH-93            91.087     2.143      0          0          0
MH-94            90.874     2.106      0          0          0
MH-95            91.467     2.083      0          0          0
MH-96            91.236     1.914      0          0          0
MH-97            91.122     2.008      0          0          0
MH-98            90.919     2.121      0          0          0
MH-99            90.761     2.189      0          0          0

[OUTFALLS]
;;Name           Elevation  Type       Stage Data       Gated    Route To
;;-------------- ---------- ---------- ---------------- -------- --------
--------
;Jock XS-6745
MH-126           89.35      FIXED      91.9             NO
;Jock XS - 7657
MH-30            90.001     FIXED      92.06            NO
;Jock XS -7441
MH-62            89.565     FIXED      92.02            NO
;Jock XS -7441
MH-84            89.462     FIXED      92.02            NO

[CONDUITS]
;;Name           From Node         To Node          Length     Roughness
InOffset   OutOffset  InitFlow   MaxFlow
;;-------------- ---------------- ---------------- ---------- ----------
---------- ---------- ---------- ----------
STM-100-101      MH-100            MH-101           8          0.013
90.705     90.689     0          0
STM-101-102      MH-101            MH-102           62         0.013
90.539     90.446     0          0
```

STM-10-19	MH-10	MH-19	48	0.013	90.62	90.524	0	0
STM-10200-111	MH-10200	MH-111	13.5	0.013	91.05	91.003	0	0
STM-102-104	MH-102	MH-104	83.5	0.013	90.371	90.246	0	0
STM-103-104	MH-103	MH-104	32	0.013	91.16	90.696	0	0
STM-104-105	MH-104	MH-105	55	0.013	90.171	90.088	0	0
STM-105-106	MH-105	MH-106	51.5	0.013	90.068	89.991	0	0
STM-106-107	MH-106	MH-107	9.5	0.013	89.961	89.947	0	0
STM-107-116	MH-107	MH-116	6	0.013	89.887	89.878	0	0
STM-108-109	MH-108	MH-109	26.5	0.013	90.969	90.876	0	0
STM-108-75	MH-108	MH-75	21.5	0.013	90.867	90.792	0	0
STM-109-113	MH-109	MH-113	88.5	0.013	90.726	90.549	0	0
STM-11000-109	MH-11000	MH-109	43.5	0.013	90.932	90.801	0	0
STM-110-114	MH-110	MH-114	99.5	0.013	90.718	90.519	0	0
STM-11100-110	MH-11100	MH-110	43.5	0.013	91.02	90.868	0	0
STM-111-112	MH-111	MH-112	55	0.013	90.943	90.75	0	0
STM-11-12	MH-11	MH-12	46.5	0.013	91.889	91.726	0	0
STM-11-20	MH-11	MH-20	10.5	0.013	91.82	91.783	0	0
STM-11200-105	MH-11200	MH-105	98.5	0.013	90.64	90.443	0	0
STM-112-115	MH-112	MH-115	57	0.013	90.675	90.504	0	0
STM-11300-114	MH-11300	MH-114	45	0.013	90.609	90.519	0	0
STM-113-120	MH-113	MH-120	68.5	0.013	90.399	90.296	0	0
STM-114-115	MH-114	MH-115	45	0.013	90.444	90.354	0	0
STM-115-116	MH-115	MH-116	88	0.013	90.279	90.103	0	0
STM-116-122	MH-116	MH-122	67.5	0.013	89.803	89.695	0	0
STM-117-118	MH-117	MH-118	73.5	0.013	90.643	90.496	0	0
STM-118-119	MH-118	MH-119	10.5	0.013	90.421	90.4	0	0
STM-119-120	MH-119	MH-120	39.5	0.013	90.325	90.266	0	0

STM-1-2 MH-1 MH-2 73 0.013
92.021 91.765 0 0
STM-120-121 MH-120 MH-121 84 0.013
90.116 89.99 0 0
STM-121-122 MH-121 MH-122 98.5 0.013
89.915 89.767 0 0
STM-12-13 MH-12 MH-13 16 0.013
91.666 91.594 0 0
STM-122-124 MH-122 MH-124 17 0.013
89.617 89.578 0 0
STM-123-124 MH-123 MH-124 27 0.013
90.591 90.253 0 0
STM-124-125 MH-124 MH-125 34.5 0.013
89.503 89.437 0 0
STM-125-126 MH-125 MH-126 35 0.013
89.403 89.35 0 0
STM-13-14 MH-13 MH-14 70 0.013
91.444 91.269 0 0
STM-14-15 MH-14 MH-15 64.5 0.013
91.194 91.065 0 0
STM-1-45 MH-1 MH-45 13 0.013
91.419 91.373 0 0
STM-1500-6 MH-1500 MH-6 59.5 0.013
91.413 91.205 0 0
STM-15-16 MH-15 MH-16 60.5 0.013
90.99 90.899 0 0
STM-16-17 MH-16 MH-17 68 0.013
90.879 90.743 0 0
STM-17-18 MH-17 MH-18 16 0.013
90.713 90.681 0 0
STM-18-19 MH-18 MH-19 54.5 0.013
90.606 90.524 0 0
STM-19-29 MH-19 MH-29 64 0.013
90.449 90.225 0 0
STM-20-21 MH-20 MH-21 67 0.013
91.708 91.507 0 0
STM-21-22 MH-21 MH-22 67 0.013
91.432 91.231 0 0
STM-22-23 MH-22 MH-23 61.5 0.013
91.156 91.002 0 0
STM-2-3 MH-2 MH-3 67 0.013
91.69 91.489 0 0
STM-23-24 MH-23 MH-24 82 0.013
90.927 90.763 0 0
STM-24-25 MH-24 MH-25 41.5 0.013
90.733 90.629 0 0
STM-25-26 MH-25 MH-26 39 0.013
90.599 90.501 0 0
STM-26-29 MH-26 MH-29 63 0.013
90.426 90.3 0 0
STM-27-28 MH-27 MH-28 12.5 0.013
90.706 90.681 0 0
STM-28-29 MH-28 MH-29 50.5 0.013
90.651 90.525 0 0

STM-29-30	MH-29	MH-30	27	0.013	90.15	90.001	0	0
STM-31-32	MH-31	MH-32	37	0.013	91.965	91.835	0	0
STM-31-64	MH-31	MH-64	9	0.013	91.776	91.654	0	0
STM-3200-38	MH-3200	MH-38	86.5	0.013	91.967	91.621	0	0
STM-32-33	MH-32	MH-33	40	0.013	91.815	91.675	0	0
STM-33-34	MH-33	MH-34	10.5	0.013	91.645	91.608	0	0
STM-3-4	MH-3	MH-4	10	0.013	91.459	91.419	0	0
STM-34-35	MH-34	MH-35	77	0.013	91.458	91.304	0	0
STM-35-36	MH-35	MH-36	77	0.013	91.154	91.038	0	0
STM-36-37	MH-36	MH-37	61.5	0.013	91.018	90.926	0	0
STM-37-44	MH-37	MH-44	61.5	0.013	90.906	90.814	0	0
STM-38-40	MH-38	MH-40	86.5	0.013	91.471	91.298	0	0
STM-39-40	MH-39	MH-40	24.5	0.013	91.534	91.448	0	0
STM-39-70	MH-39	MH-70	19.5	0.013	91.436	91.251	0	0
STM-4000-36	MH-4000	MH-36	44.5	0.013	91.474	91.318	0	0
STM-40-41	MH-40	MH-41	61.5	0.013	91.223	91.1	0	0
STM-41-43	MH-41	MH-43	61.5	0.013	91.08	90.957	0	0
STM-42-43	MH-42	MH-43	22	0.013	91.259	91.182	0	0
STM-42-72	MH-42	MH-72	22	0.013	91.172	90.985	0	0
STM-43-44	MH-43	MH-44	45	0.013	90.882	90.814	0	0
STM-44-47	MH-44	MH-47	62	0.013	90.664	90.571	0	0
STM-4-5	MH-4	MH-5	73	0.013	91.269	91.123	0	0
STM-45-46	MH-45	MH-46	88	0.013	91.223	91.047	0	0
STM-46-47	MH-46	MH-47	88	0.013	90.972	90.796	0	0
STM-47-48	MH-47	MH-48	48	0.013	90.496	90.424	0	0
STM-48-50	MH-48	MH-50	12.5	0.013	90.394	90.375	0	0
STM-49-50	MH-49	MH-50	13	0.013	90.776	90.75	0	0

STM-50-51	MH-50	MH-51	13	0.013	90.3	90.28	0	0
STM-51-52	MH-51	MH-52	55	0.013	90.205	90.095	0	0
STM-5200-57	MH-5200	MH-57	34	0.013	90.889	90.77	0	0
STM-52-54	MH-52	MH-54	30	0.013	90.02	89.975	0	0
STM-53-54	MH-53	MH-54	27.5	0.013	90.761	90.665	0	0
STM-53-80	MH-53	MH-80	25.5	0.013	90.724	90.545	0	0
STM-54-55	MH-54	MH-55	90	0.013	89.915	89.78	0	0
STM-55-56	MH-55	MH-56	11	0.013	89.75	89.733	0	0
STM-5-6	MH-5	MH-6	82	0.013	91.048	90.925	0	0
STM-56-61	MH-56	MH-61	25.5	0.013	89.703	89.665	0	0
STM-57-58	MH-57	MH-58	45.5	0.013	90.695	90.558	0	0
STM-58-59	MH-58	MH-59	50	0.013	90.483	90.383	0	0
STM-59-60	MH-59	MH-60	12.5	0.013	90.323	90.292	0	0
STM-60-61	MH-60	MH-61	19	0.013	90.262	90.205	0	0
STM-61-62	MH-61	MH-62	26.5	0.013	89.605	89.565	0	0
STM-63-65	MH-63	MH-65	67	0.013	91.684	91.449	0	0
STM-6400-69	MH-6400	MH-69	90.5	0.013	91.794	91.432	0	0
STM-64-65	MH-64	MH-65	50	0.013	91.624	91.449	0	0
STM-65-66	MH-65	MH-66	68.5	0.013	91.299	91.128	0	0
STM-66-67	MH-66	MH-67	88	0.013	91.053	90.877	0	0
STM-6-7	MH-6	MH-7	54	0.013	90.905	90.797	0	0
STM-67-68	MH-67	MH-68	58.5	0.013	90.652	90.564	0	0
STM-68-73	MH-68	MH-73	64.5	0.013	90.489	90.392	0	0
STM-69-70	MH-69	MH-70	90.5	0.013	91.282	91.101	0	0
STM-7000-67	MH-7000	MH-67	43.5	0.013	91.254	91.102	0	0
STM-70-71	MH-70	MH-71	61.5	0.013	91.026	90.903	0	0
STM-7-10	MH-7	MH-10	54.5	0.013	90.722	90.64	0	0

STM-71-72 MH-71 MH-72 61.5 0.013
90.883 90.76 0 0
STM-72-73 MH-72 MH-73 45 0.013
90.685 90.617 0 0
STM-73-75 MH-73 MH-75 63 0.013
90.242 90.147 0 0
STM-74-49 MH-74 MH-49 107.5 0.013
91.021 90.806 0 0
STM-74-75 MH-74 MH-75 78 0.013
90.951 90.717 0 0
STM-75-76 MH-75 MH-76 62 0.013
90.117 90.024 0 0
STM-76-77 MH-76 MH-77 57 0.013
89.964 89.878 0 0
STM-7700-80 MH-7700 MH-80 64 0.013
90.769 90.545 0 0
STM-77-78 MH-77 MH-78 78 0.013
89.818 89.701 0 0
STM-78-79 MH-78 MH-79 12.5 0.013
89.671 89.652 0 0
STM-79-83 MH-79 MH-83 31 0.013
89.622 89.575 0 0
STM-80-81 MH-80 MH-81 79.5 0.013
90.395 90.236 0 0
STM-81-82 MH-81 MH-82 14 0.013
90.176 90.141 0 0
STM-82-83 MH-82 MH-83 13.5 0.013
90.081 90.04 0 0
STM-83-84 MH-83 MH-84 26.5 0.013
89.515 89.462 0 0
STM-85-63 MH-85 MH-63 10.5 0.013
91.751 91.714 0 0
STM-8-57 MH-8 MH-57 25 0.013
91.12 90.77 0 0
STM-85-86 MH-85 MH-86 50 0.013
91.758 91.583 0 0
STM-86-87 MH-86 MH-87 9.5 0.013
91.523 91.49 0 0
STM-87-88 MH-87 MH-88 27 0.013
91.34 91.259 0 0
STM-88-89 MH-88 MH-89 13 0.013
91.229 91.19 0 0
STM-8-9 MH-8 MH-9 28.5 0.013
91.351 91.251 0 0
STM-89-90 MH-89 MH-90 50 0.013
91.04 90.965 0 0
STM-90000-92 MH-90000 MH-92 58.5 0.013
91.424 91.219 0 0
STM-9000-27 MH-9000 MH-27 103 0.013
90.942 90.736 0 0
STM-90-67 MH-90 MH-67 108.5 0.013
90.89 90.727 0 0
STM-9-10 MH-9 MH-10 59 0.013
91.231 90.995 0 0

```
STM-91-68        MH-91            MH-68            79.5       0.013
91.178     90.939     0          0
STM-91-92        MH-91            MH-92            30.5       0.013
91.326     91.219     0          0
STM-92-94        MH-92            MH-94            65         0.013
91.144     90.949     0          0
STM-93-73        MH-93            MH-73            81.5       0.013
91.087     90.842     0          0
STM-93-94        MH-93            MH-94            28.5       0.013
91.366     91.024     0          0
STM-94-101       MH-94            MH-101           44         0.013
90.874     90.764     0          0
STM-95-96        MH-95            MH-96            44.5       0.013
91.467     91.311     0          0
STM-96-97        MH-96            MH-97            13         0.013
91.236     91.197     0          0
STM-97-98        MH-97            MH-98            64         0.013
91.122     90.994     0          0
STM-98-99        MH-98            MH-99            64         0.013
90.919     90.791     0          0
STM-99-100       MH-99            MH-100           13         0.013
90.761     90.735     0          0

[XSECTIONS]
;;Link           Shape        Geom1            Geom2      Geom3
Geom4      Barrels    Culvert
;;-------------- ------------ ---------------- ---------- ---------- ----
------ ---------- ----------
STM-100-101      CIRCULAR     0.525            0          0          0
1
STM-101-102      CIRCULAR     0.675            0          0          0
1
STM-10-19        CIRCULAR     0.675            0          0          0
1
STM-10200-111    CIRCULAR     0.3              0          0          0
1
STM-102-104      CIRCULAR     0.75             0          0          0
1
STM-103-104      CIRCULAR     0.3              0          0          0
1
STM-104-105      CIRCULAR     0.825            0          0          0
1
STM-105-106      CIRCULAR     0.825            0          0          0
1
STM-106-107      CIRCULAR     0.825            0          0          0
1
STM-107-116      CIRCULAR     0.825            0          0          0
1
STM-108-109      CIRCULAR     0.3              0          0          0
1
STM-108-75       CIRCULAR     0.3              0          0          0
1
STM-109-113      CIRCULAR     0.45             0          0          0
1
```

STM-11000-109	CIRCULAR	0.375	0	0	0
1					
STM-110-114	CIRCULAR	0.45	0	0	0
1					
STM-11100-110	CIRCULAR	0.3	0	0	0
1					
STM-111-112	CIRCULAR	0.3	0	0	0
1					
STM-11-12	CIRCULAR	0.3	0	0	0
1					
STM-11-20	CIRCULAR	0.3	0	0	0
1					
STM-11200-105	CIRCULAR	0.45	0	0	0
1					
STM-112-115	CIRCULAR	0.375	0	0	0
1					
STM-11300-114	CIRCULAR	0.45	0	0	0
1					
STM-113-120	CIRCULAR	0.6	0	0	0
1					
STM-114-115	CIRCULAR	0.525	0	0	0
1					
STM-115-116	CIRCULAR	0.6	0	0	0
1					
STM-116-122	CIRCULAR	0.9	0	0	0
1					
STM-117-118	CIRCULAR	0.45	0	0	0
1					
STM-118-119	CIRCULAR	0.525	0	0	0
1					
STM-119-120	CIRCULAR	0.6	0	0	0
1					
STM-1-2	CIRCULAR	0.3	0	0	0
1					
STM-120-121	CIRCULAR	0.75	0	0	0
1					
STM-121-122	CIRCULAR	0.825	0	0	0
1					
STM-12-13	CIRCULAR	0.3	0	0	0
1					
STM-122-124	CIRCULAR	0.975	0	0	0
1					
STM-123-124	CIRCULAR	0.3	0	0	0
1					
STM-124-125	CIRCULAR	1.05	0	0	0
1					
STM-125-126	CIRCULAR	1.05	0	0	0
1					
STM-13-14	CIRCULAR	0.45	0	0	0
1					
STM-14-15	CIRCULAR	0.525	0	0	0
1					
STM-1-45	CIRCULAR	0.3	0	0	0
1					

STM-1500-6	CIRCULAR	0.3	0	0	0	1
STM-15-16	CIRCULAR	0.6	0	0	0	1
STM-16-17	CIRCULAR	0.6	0	0	0	1
STM-17-18	CIRCULAR	0.6	0	0	0	1
STM-18-19	CIRCULAR	0.675	0	0	0	1
STM-19-29	CIRCULAR	0.75	0	0	0	1
STM-20-21	CIRCULAR	0.375	0	0	0	1
STM-21-22	CIRCULAR	0.45	0	0	0	1
STM-22-23	CIRCULAR	0.525	0	0	0	1
STM-2-3	CIRCULAR	0.375	0	0	0	1
STM-23-24	CIRCULAR	0.6	0	0	0	1
STM-24-25	CIRCULAR	0.6	0	0	0	1
STM-25-26	CIRCULAR	0.6	0	0	0	1
STM-26-29	CIRCULAR	0.675	0	0	0	1
STM-27-28	CIRCULAR	0.45	0	0	0	1
STM-28-29	CIRCULAR	0.45	0	0	0	1
STM-29-30	CIRCULAR	0.825	0	0	0	1
STM-31-32	CIRCULAR	0.3	0	0	0	1
STM-31-64	CIRCULAR	0.3	0	0	0	1
STM-3200-38	CIRCULAR	0.3	0	0	0	1
STM-32-33	CIRCULAR	0.3	0	0	0	1
STM-33-34	CIRCULAR	0.3	0	0	0	1
STM-3-4	CIRCULAR	0.375	0	0	0	1
STM-34-35	CIRCULAR	0.45	0	0	0	1
STM-35-36	CIRCULAR	0.6	0	0	0	1
STM-36-37	CIRCULAR	0.6	0	0	0	1
STM-37-44	CIRCULAR	0.6	0	0	0	1

STM-38-40	CIRCULAR	0.45	0	0	0	1
STM-39-40	CIRCULAR	0.3	0	0	0	1
STM-39-70	CIRCULAR	0.3	0	0	0	1
STM-4000-36	CIRCULAR	0.3	0	0	0	1
STM-40-41	CIRCULAR	0.525	0	0	0	1
STM-41-43	CIRCULAR	0.525	0	0	0	1
STM-42-43	CIRCULAR	0.3	0	0	0	1
STM-42-72	CIRCULAR	0.3	0	0	0	1
STM-43-44	CIRCULAR	0.6	0	0	0	1
STM-44-47	CIRCULAR	0.75	0	0	0	1
STM-4-5	CIRCULAR	0.525	0	0	0	1
STM-45-46	CIRCULAR	0.45	0	0	0	1
STM-46-47	CIRCULAR	0.525	0	0	0	1
STM-47-48	CIRCULAR	0.825	0	0	0	1
STM-48-50	CIRCULAR	0.825	0	0	0	1
STM-49-50	CIRCULAR	0.45	0	0	0	1
STM-50-51	CIRCULAR	0.9	0	0	0	1
STM-51-52	CIRCULAR	0.975	0	0	0	1
STM-5200-57	CIRCULAR	0.3	0	0	0	1
STM-52-54	CIRCULAR	1.05	0	0	0	1
STM-53-54	CIRCULAR	0.3	0	0	0	1
STM-53-80	CIRCULAR	0.3	0	0	0	1
STM-54-55	CIRCULAR	1.05	0	0	0	1
STM-55-56	CIRCULAR	1.05	0	0	0	1
STM-5-6	CIRCULAR	0.6	0	0	0	1
STM-56-61	CIRCULAR	1.05	0	0	0	1
STM-57-58	CIRCULAR	0.375	0	0	0	1

STM-58-59	CIRCULAR	0.45	0	0	0	1
STM-59-60	CIRCULAR	0.45	0	0	0	1
STM-60-61	CIRCULAR	0.45	0	0	0	1
STM-61-62	CIRCULAR	1.05	0	0	0	1
STM-63-65	CIRCULAR	0.3	0	0	0	1
STM-6400-69	CIRCULAR	0.3	0	0	0	1
STM-64-65	CIRCULAR	0.3	0	0	0	1
STM-65-66	CIRCULAR	0.45	0	0	0	1
STM-66-67	CIRCULAR	0.525	0	0	0	1
STM-6-7	CIRCULAR	0.6	0	0	0	1
STM-67-68	CIRCULAR	0.75	0	0	0	1
STM-68-73	CIRCULAR	0.825	0	0	0	1
STM-69-70	CIRCULAR	0.45	0	0	0	1
STM-7000-67	CIRCULAR	0.3	0	0	0	1
STM-70-71	CIRCULAR	0.525	0	0	0	1
STM-7-10	CIRCULAR	0.675	0	0	0	1
STM-71-72	CIRCULAR	0.525	0	0	0	1
STM-72-73	CIRCULAR	0.6	0	0	0	1
STM-73-75	CIRCULAR	0.975	0	0	0	1
STM-74-49	CIRCULAR	0.45	0	0	0	1
STM-74-75	CIRCULAR	0.375	0	0	0	1
STM-75-76	CIRCULAR	0.975	0	0	0	1
STM-76-77	CIRCULAR	0.975	0	0	0	1
STM-7700-80	CIRCULAR	0.3	0	0	0	1
STM-77-78	CIRCULAR	0.975	0	0	0	1
STM-78-79	CIRCULAR	0.975	0	0	0	1
STM-79-83	CIRCULAR	0.975	0	0	0	1

STM-80-81	CIRCULAR	0.45	0	0	0	1
STM-81-82	CIRCULAR	0.45	0	0	0	1
STM-82-83	CIRCULAR	0.45	0	0	0	1
STM-83-84	CIRCULAR	0.975	0	0	0	1
STM-85-63	CIRCULAR	0.3	0	0	0	1
STM-8-57	CIRCULAR	0.3	0	0	0	1
STM-85-86	CIRCULAR	0.3	0	0	0	1
STM-86-87	CIRCULAR	0.3	0	0	0	1
STM-87-88	CIRCULAR	0.45	0	0	0	1
STM-88-89	CIRCULAR	0.45	0	0	0	1
STM-8-9	CIRCULAR	0.3	0	0	0	1
STM-89-90	CIRCULAR	0.6	0	0	0	1
STM-90000-92	CIRCULAR	0.3	0	0	0	1
STM-9000-27	CIRCULAR	0.45	0	0	0	1
STM-90-67	CIRCULAR	0.675	0	0	0	1
STM-9-10	CIRCULAR	0.3	0	0	0	1
STM-91-68	CIRCULAR	0.375	0	0	0	1
STM-91-92	CIRCULAR	0.3	0	0	0	1
STM-92-94	CIRCULAR	0.375	0	0	0	1
STM-93-73	CIRCULAR	0.375	0	0	0	1
STM-93-94	CIRCULAR	0.3	0	0	0	1
STM-94-101	CIRCULAR	0.45	0	0	0	1
STM-95-96	CIRCULAR	0.3	0	0	0	1
STM-96-97	CIRCULAR	0.375	0	0	0	1
STM-97-98	CIRCULAR	0.45	0	0	0	1
STM-98-99	CIRCULAR	0.525	0	0	0	1
STM-99-100	CIRCULAR	0.525	0	0	0	1

```
[LOSSES]
;;Link           Kentry     Kexit      Kavg       Flap Gate  Seepage
;;-------------- ---------- ---------- ---------- ---------- ----------
STM-100-101      0          1.33       0          NO         0
STM-101-102      0          1.33       0          NO         0
STM-10-19        0          0.035      0          NO         0
STM-10200-111    0          1.33       0          NO         0
STM-102-104      0          1.33       0          NO         0
STM-103-104      0          1.33       0          NO         0
STM-104-105      0          0.02       0          NO         0
STM-105-106      0          0.47       0          NO         0
STM-106-107      0          0.47       0          NO         0
STM-107-116      0          1.33       0          NO         0
STM-108-109      0          1.33       0          NO         0
STM-108-75       0          1.33       0          NO         0
STM-109-113      0          0.035      0          NO         0
STM-11000-109    0          1.33       0          NO         0
STM-110-114      0          1.07       0          NO         0
STM-11100-110    0          1.33       0          NO         0
STM-111-112      0          0.035      0          NO         0
STM-11-12        0          0.54       0          NO         0
STM-11-20        0          0.32       0          NO         0
STM-11200-105    0          1.33       0          NO         0
STM-112-115      0          1.33       0          NO         0
STM-11300-114    0          0.035      0          NO         0
STM-113-120      0          1.07       0          NO         0
STM-114-115      0          0.08       0          NO         0
STM-115-116      0          1.33       0          NO         0
STM-116-122      0          1.33       0          NO         0
STM-117-118      0          0.47       0          NO         0
STM-118-119      0          0.26       0          NO         0
STM-119-120      0          0.035      0          NO         0
STM-1-2          0          0.035      0          NO         0
STM-120-121      0          0.08       0          NO         0
STM-121-122      0          0.035      0          NO         0
STM-12-13        0          0.54       0          NO         0
STM-122-124      0          1.33       0          NO         0
STM-123-124      0          1.33       0          NO         0
STM-124-125      0          0.02       0          NO         0
STM-13-14        0          0.035      0          NO         0
STM-14-15        0          0.02       0          NO         0
STM-1-45         0          0.47       0          NO         0
STM-1500-6       0          1.33       0          NO         0
STM-15-16        0          0.035      0          NO         0
STM-16-17        0          0.16       0          NO         0
STM-17-18        0          0.54       0          NO         0
STM-18-19        0          1.07       0          NO         0
STM-19-29        0          0.055      0          NO         0
STM-20-21        0          0.035      0          NO         0
STM-21-22        0          0.035      0          NO         0
STM-22-23        0          0.035      0          NO         0
STM-2-3          0          0.32       0          NO         0
STM-23-24        0          0.32       0          NO         0
```

STM-24-25	0	0.16	0	NO	0
STM-25-26	0	0.11	0	NO	0
STM-26-29	0	1.33	0	NO	0
STM-27-28	0	0.39	0	NO	0
STM-28-29	0	1.07	0	NO	0
STM-31-32	0	0.02	0	NO	0
STM-31-64	0	0.08	0	NO	0
STM-3200-38	0	0.035	0	NO	0
STM-32-33	0	0.32	0	NO	0
STM-33-34	0	0.32	0	NO	0
STM-3-4	0	0.32	0	NO	0
STM-34-35	0	0.035	0	NO	0
STM-35-36	0	0.02	0	NO	0
STM-36-37	0	0.02	0	NO	0
STM-37-44	0	1.33	0	NO	0
STM-38-40	0	0.02	0	NO	0
STM-39-40	0	1.33	0	NO	0
STM-39-70	0	1.33	0	NO	0
STM-4000-36	0	1.33	0	NO	0
STM-40-41	0	0.02	0	NO	0
STM-41-43	0	1.33	0	NO	0
STM-42-43	0	0.02	0	NO	0
STM-42-72	0	0.02	0	NO	0
STM-43-44	0	0.02	0	NO	0
STM-44-47	0	1.33	0	NO	0
STM-4-5	0	0.035	0	NO	0
STM-45-46	0	0.035	0	NO	0
STM-46-47	0	0.035	0	NO	0
STM-47-48	0	0.16	0	NO	0
STM-48-50	0	0.635	0	NO	0
STM-49-50	0	0.95	0	NO	0
STM-50-51	0	0.32	0	NO	0
STM-51-52	0	1.33	0	NO	0
STM-5200-57	0	1.33	0	NO	0
STM-52-54	0	1.33	0	NO	0
STM-53-54	0	1.33	0	NO	0
STM-53-80	0	1.33	0	NO	0
STM-54-55	0	0.39	0	NO	0
STM-55-56	0	0.32	0	NO	0
STM-5-6	0	0.02	0	NO	0
STM-56-61	0	1.33	0	NO	0
STM-57-58	0	0.035	0	NO	0
STM-58-59	0	0.54	0	NO	0
STM-59-60	0	0.39	0	NO	0
STM-60-61	0	1.33	0	NO	0
STM-63-65	0	1.33	0	NO	0
STM-6400-69	0	0.02	0	NO	0
STM-64-65	0	0.73	0	NO	0
STM-65-66	0	0.035	0	NO	0
STM-66-67	0	0.035	0	NO	0
STM-6-7	0	0.035	0	NO	0
STM-67-68	0	0.035	0	NO	0
STM-68-73	0	0.035	0	NO	0
STM-69-70	0	0.035	0	NO	0

```
STM-7000-67      0          1.33       0          NO         0
STM-70-71        0          0.02       0          NO         0
STM-7-10         0          0.035      0          NO         0
STM-71-72        0          1.33       0          NO         0
STM-72-73        0          1.33       0          NO         0
STM-73-75        0          0.055      0          NO         0
STM-74-49        0          0.11       0          NO         0
STM-74-75        0          1.33       0          NO         0
STM-75-76        0          1.33       0          NO         0
STM-76-77        0          1.33       0          NO         0
STM-7700-80      0          1.33       0          NO         0
STM-77-78        0          0.39       0          NO         0
STM-78-79        0          0.39       0          NO         0
STM-79-83        0          1.33       0          NO         0
STM-80-81        0          0.47       0          NO         0
STM-81-82        0          0.47       0          NO         0
STM-82-83        0          1.33       0          NO         0
STM-85-63        0          0.26       0          NO         0
STM-8-57         0          1.33       0          NO         0
STM-85-86        0          0.47       0          NO         0
STM-86-87        0          0.47       0          NO         0
STM-87-88        0          0.39       0          NO         0
STM-88-89        0          0.47       0          NO         0
STM-8-9          0          0.02       0          NO         0
STM-89-90        0          1.33       0          NO         0
STM-90000-92     0          0.02       0          NO         0
STM-9000-27      0          0.39       0          NO         0
STM-90-67        0          1.33       0          NO         0
STM-9-10         0          1.33       0          NO         0
STM-91-68        0          1.33       0          NO         0
STM-91-92        0          1.33       0          NO         0
STM-92-94        0          1.33       0          NO         0
STM-93-73        0          1.33       0          NO         0
STM-93-94        0          0.035      0          NO         0
STM-94-101       0          1.33       0          NO         0
STM-95-96        0          0.39       0          NO         0
STM-96-97        0          0.47       0          NO         0
STM-97-98        0          0.02       0          NO         0
STM-98-99        0          0.39       0          NO         0
STM-99-100       0          0.47       0          NO         0

[INFLOWS]
;;Node           Constituent      Time Series      Type     Mfactor  
Sfactor  Baseline Pattern
;;-------------- ---------------- ---------------- -------- -------- ----
---- -------- --------
MH-1             FLOW             ""               FLOW     1.0      1        
72.2
MH-10            FLOW             ""               FLOW     1.0      1        
7.1
MH-100           FLOW             ""               FLOW     1.0      1        
2.1
MH-102           FLOW             ""               FLOW     1.0      1        
62.5
```

MH-10200	FLOW	""	FLOW	1.0	1	1.9
MH-103	FLOW	""	FLOW	1.0	1	24.5
MH-106	FLOW	""	FLOW	1.0	1	2
MH-107	FLOW	""	FLOW	1.0	1	1
MH-108	FLOW	""	FLOW	1.0	1	32
MH-109	FLOW	""	FLOW	1.0	1	45.8
MH-11	FLOW	""	FLOW	1.0	1	37.5
MH-110	FLOW	""	FLOW	1.0	1	50.3
MH-11000	FLOW	""	FLOW	1.0	1	32
MH-111	FLOW	""	FLOW	1.0	1	20.5
MH-11100	FLOW	""	FLOW	1.0	1	35.8
MH-112	FLOW	""	FLOW	1.0	1	18.3
MH-11200	FLOW	""	FLOW	1.0	1	69.4
MH-113	FLOW	""	FLOW	1.0	1	12.9
MH-11300	FLOW	""	FLOW	1.0	1	16.7
MH-114	FLOW	""	FLOW	1.0	1	10.8
MH-115	FLOW	""	FLOW	1.0	1	49.4
MH-117	FLOW	""	FLOW	1.0	1	84.7
MH-118	FLOW	""	FLOW	1.0	1	16.7
MH-119	FLOW	""	FLOW	1.0	1	28.5
MH-12	FLOW	""	FLOW	1.0	1	22.7
MH-120	FLOW	""	FLOW	1.0	1	64.7
MH-121	FLOW	""	FLOW	1.0	1	88.6
MH-123	FLOW	""	FLOW	1.0	1	22.6
MH-124	FLOW	""	FLOW	1.0	1	2.3
MH-125	FLOW	""	FLOW	1.0	1	6.7
MH-13	FLOW	""	FLOW	1.0	1	51.6

MH-14	FLOW	""	FLOW	1.0	1
37.5					
MH-15	FLOW	""	FLOW	1.0	1
33.1					
MH-1500	FLOW	""	FLOW	1.0	1
11.1					
MH-16	FLOW	""	FLOW	1.0	1
36.9					
MH-17	FLOW	""	FLOW	1.0	1
5.1					
MH-18	FLOW	""	FLOW	1.0	1
20.2					
MH-2	FLOW	""	FLOW	1.0	1
30.7					
MH-20	FLOW	""	FLOW	1.0	1
54.8					
MH-21	FLOW	""	FLOW	1.0	1
46.4					
MH-22	FLOW	""	FLOW	1.0	1
38.6					
MH-23	FLOW	""	FLOW	1.0	1
48.8					
MH-24	FLOW	""	FLOW	1.0	1
15.9					
MH-25	FLOW	""	FLOW	1.0	1
18.8					
MH-26	FLOW	""	FLOW	1.0	1
28.9					
MH-27	FLOW	""	FLOW	1.0	1
6.1					
MH-28	FLOW	""	FLOW	1.0	1
22.6					
MH-3	FLOW	""	FLOW	1.0	1
10.7					
MH-31	FLOW	""	FLOW	1.0	1
30.5					
MH-32	FLOW	""	FLOW	1.0	1
19.2					
MH-3200	FLOW	""	FLOW	1.0	1
47.2					
MH-33	FLOW	""	FLOW	1.0	1
2.3					
MH-34	FLOW	""	FLOW	1.0	1
40.3					
MH-35	FLOW	""	FLOW	1.0	1
40.8					
MH-36	FLOW	""	FLOW	1.0	1
24.6					
MH-37	FLOW	""	FLOW	1.0	1
22.9					
MH-38	FLOW	""	FLOW	1.0	1
42.6					
MH-39	FLOW	""	FLOW	1.0	1
6.9					

MH-4	FLOW	""	FLOW	1.0	1
52.7					
MH-40	FLOW	""	FLOW	1.0	1
20					
MH-4000	FLOW	""	FLOW	1.0	1
8.3					
MH-41	FLOW	""	FLOW	1.0	1
20.9					
MH-42	FLOW	""	FLOW	1.0	1
23.6					
MH-43	FLOW	""	FLOW	1.0	1
10.2					
MH-44	FLOW	""	FLOW	1.0	1
5.3					
MH-45	FLOW	""	FLOW	1.0	1
48.9					
MH-46	FLOW	""	FLOW	1.0	1
33.7					
MH-5	FLOW	""	FLOW	1.0	1
45.3					
MH-51	FLOW	""	FLOW	1.0	1
230.1					
MH-5200	FLOW	""	FLOW	1.0	1
16.7					
MH-53	FLOW	""	FLOW	1.0	1
29.1					
MH-54	FLOW	""	FLOW	1.0	1
31.6					
MH-56	FLOW	""	FLOW	1.0	1
4.8					
MH-57	FLOW	""	FLOW	1.0	1
31.2					
MH-58	FLOW	""	FLOW	1.0	1
33.6					
MH-59	FLOW	""	FLOW	1.0	1
14.2					
MH-6	FLOW	""	FLOW	1.0	1
19					
MH-60	FLOW	""	FLOW	1.0	1
7.5					
MH-63	FLOW	""	FLOW	1.0	1
32.9					
MH-64	FLOW	""	FLOW	1.0	1
26.2					
MH-6400	FLOW	""	FLOW	1.0	1
47.2					
MH-65	FLOW	""	FLOW	1.0	1
31.2					
MH-66	FLOW	""	FLOW	1.0	1
40.5					
MH-69	FLOW	""	FLOW	1.0	1
44.8					
MH-7	FLOW	""	FLOW	1.0	1
19.2					

MH-70	FLOW	""	FLOW	1.0	1	19.5
MH-7000	FLOW	""	FLOW	1.0	1	8.3
MH-71	FLOW	""	FLOW	1.0	1	20.8
MH-72	FLOW	""	FLOW	1.0	1	8.7
MH-74	FLOW	""	FLOW	1.0	1	154.1
MH-76	FLOW	""	FLOW	1.0	1	0.9
MH-77	FLOW	""	FLOW	1.0	1	24.4
MH-7700	FLOW	""	FLOW	1.0	1	34.7
MH-79	FLOW	""	FLOW	1.0	1	6.5
MH-8	FLOW	""	FLOW	1.0	1	29.1
MH-80	FLOW	""	FLOW	1.0	1	53.1
MH-81	FLOW	""	FLOW	1.0	1	11.1
MH-82	FLOW	""	FLOW	1.0	1	4.8
MH-85	FLOW	""	FLOW	1.0	1	33.3
MH-86	FLOW	""	FLOW	1.0	1	14.5
MH-87	FLOW	""	FLOW	1.0	1	82.8
MH-89	FLOW	""	FLOW	1.0	1	12.7
MH-9	FLOW	""	FLOW	1.0	1	27.8
MH-90	FLOW	""	FLOW	1.0	1	58.5
MH-9000	FLOW	""	FLOW	1.0	1	80.5
MH-90000	FLOW	""	FLOW	1.0	1	30.5
MH-91	FLOW	""	FLOW	1.0	1	73.6
MH-92	FLOW	""	FLOW	1.0	1	24.8
MH-93	FLOW	""	FLOW	1.0	1	81.9
MH-94	FLOW	""	FLOW	1.0	1	12.4
MH-95	FLOW	""	FLOW	1.0	1	26.4
MH-96	FLOW	""	FLOW	1.0	1	14.8

```
MH-97            FLOW             ""               FLOW     1.0      1
52
MH-98            FLOW             ""               FLOW     1.0      1
44
MH-99            FLOW             ""               FLOW     1.0      1
8.5

[REPORT]
;;Reporting Options
INPUT      YES
CONTROLS   NO
SUBCATCHMENTS ALL
NODES ALL
LINKS ALL

[TAGS]
Node       MH-1             MH
Node       MH-10            MH
Node       MH-100           MH
Node       MH-101           MH
Node       MH-102           MH
Node       MH-10200         MH
Node       MH-103           MH
Node       MH-104           MH
Node       MH-105           MH
Node       MH-106           MH
Node       MH-107           MH
Node       MH-108           MH
Node       MH-109           MH
Node       MH-11            MH
Node       MH-110           MH
Node       MH-11000         MH
Node       MH-111           MH
Node       MH-11100         MH
Node       MH-112           MH
Node       MH-11200         MH
Node       MH-113           MH
Node       MH-11300         MH
Node       MH-114           MH
Node       MH-115           MH
Node       MH-116           MH
Node       MH-117           MH
Node       MH-118           MH
Node       MH-119           MH
Node       MH-12            MH
Node       MH-120           MH
Node       MH-121           MH
Node       MH-122           MH
Node       MH-123           MH
Node       MH-124           MH
Node       MH-125           MH
Node       MH-13            MH
Node       MH-14            MH
Node       MH-15            MH
```

Node	MH-1500	MH
Node	MH-16	MH
Node	MH-17	MH
Node	MH-18	MH
Node	MH-19	MH
Node	MH-2	MH
Node	MH-20	MH
Node	MH-21	MH
Node	MH-22	MH
Node	MH-23	MH
Node	MH-24	MH
Node	MH-25	MH
Node	MH-26	MH
Node	MH-27	MH
Node	MH-28	MH
Node	MH-29	MH
Node	MH-3	MH
Node	MH-31	MH
Node	MH-32	MH
Node	MH-3200	MH
Node	MH-33	MH
Node	MH-34	MH
Node	MH-35	MH
Node	MH-36	MH
Node	MH-37	MH
Node	MH-38	MH
Node	MH-39	MH
Node	MH-4	MH
Node	MH-40	MH
Node	MH-4000	MH
Node	MH-41	MH
Node	MH-42	MH
Node	MH-43	MH
Node	MH-44	MH
Node	MH-45	MH
Node	MH-46	MH
Node	MH-47	MH
Node	MH-48	MH
Node	MH-49	MH
Node	MH-5	MH
Node	MH-50	MH
Node	MH-51	MH
Node	MH-52	MH
Node	MH-5200	MH
Node	MH-53	MH
Node	MH-54	MH
Node	MH-55	MH
Node	MH-56	MH
Node	MH-57	MH
Node	MH-58	MH
Node	MH-59	MH
Node	MH-6	MH
Node	MH-60	MH
Node	MH-61	MH

Node	MH-63	MH
Node	MH-64	MH
Node	MH-6400	MH
Node	MH-65	MH
Node	MH-66	MH
Node	MH-67	MH
Node	MH-68	MH
Node	MH-69	MH
Node	MH-7	MH
Node	MH-70	MH
Node	MH-7000	MH
Node	MH-71	MH
Node	MH-72	MH
Node	MH-73	MH
Node	MH-74	MH
Node	MH-75	MH
Node	MH-76	MH
Node	MH-77	MH
Node	MH-7700	MH
Node	MH-78	MH
Node	MH-79	MH
Node	MH-8	MH
Node	MH-80	MH
Node	MH-81	MH
Node	MH-82	MH
Node	MH-83	MH
Node	MH-85	MH
Node	MH-86	MH
Node	MH-87	MH
Node	MH-88	MH
Node	MH-89	MH
Node	MH-9	MH
Node	MH-90	MH
Node	MH-9000	MH
Node	MH-90000	MH
Node	MH-91	MH
Node	MH-92	MH
Node	MH-93	MH
Node	MH-94	MH
Node	MH-95	MH
Node	MH-96	MH
Node	MH-97	MH
Node	MH-98	MH
Node	MH-99	MH
Node	MH-126	MH
Node	MH-30	MH
Node	MH-62	MH
Node	MH-84	MH
Link	STM-100-101	Trunk_1
Link	STM-101-102	Trunk_1
Link	STM-10-19	Trunk_4
Link	STM-10200-111	Trunk_1
Link	STM-102-104	Trunk_1
Link	STM-103-104	Trunk_1

Link	STM-104-105	Trunk_1
Link	STM-105-106	Trunk_1
Link	STM-106-107	Trunk_1
Link	STM-107-116	Trunk_1
Link	STM-108-109	Trunk_1
Link	STM-108-75	Trunk_2
Link	STM-109-113	Trunk_1
Link	STM-11000-109	Trunk_1
Link	STM-110-114	Trunk_1
Link	STM-11100-110	Trunk_1
Link	STM-111-112	Trunk_1
Link	STM-11-12	Trunk_4
Link	STM-11-20	Trunk_4
Link	STM-11200-105	Trunk_1
Link	STM-112-115	Trunk_1
Link	STM-11300-114	Trunk_1
Link	STM-113-120	Trunk_1
Link	STM-114-115	Trunk_1
Link	STM-115-116	Trunk_1
Link	STM-116-122	Trunk_1
Link	STM-117-118	Trunk_1
Link	STM-118-119	Trunk_1
Link	STM-119-120	Trunk_1
Link	STM-1-2	Trunk_4
Link	STM-120-121	Trunk_1
Link	STM-121-122	Trunk_1
Link	STM-12-13	Trunk_4
Link	STM-122-124	Trunk_1
Link	STM-123-124	Trunk_1
Link	STM-124-125	Trunk_1
Link	STM-125-126	Trunk_1
Link	STM-13-14	Trunk_4
Link	STM-14-15	Trunk_4
Link	STM-1-45	Trunk_3
Link	STM-1500-6	Trunk_4
Link	STM-15-16	Trunk_4
Link	STM-16-17	Trunk_4
Link	STM-17-18	Trunk_4
Link	STM-18-19	Trunk_4
Link	STM-19-29	Trunk_4
Link	STM-20-21	Trunk_4
Link	STM-21-22	Trunk_4
Link	STM-22-23	Trunk_4
Link	STM-2-3	Trunk_4
Link	STM-23-24	Trunk_4
Link	STM-24-25	Trunk_4
Link	STM-25-26	Trunk_4
Link	STM-26-29	Trunk_4
Link	STM-27-28	Trunk_4
Link	STM-28-29	Trunk_4
Link	STM-29-30	Trunk_4
Link	STM-31-32	Trunk_3
Link	STM-31-64	Trunk_2
Link	STM-3200-38	Trunk_3

Link	STM-32-33	Trunk_3
Link	STM-33-34	Trunk_3
Link	STM-3-4	Trunk_4
Link	STM-34-35	Trunk_3
Link	STM-35-36	Trunk_3
Link	STM-36-37	Trunk_3
Link	STM-37-44	Trunk_3
Link	STM-38-40	Trunk_3
Link	STM-39-40	Trunk_3
Link	STM-39-70	Trunk_2
Link	STM-4000-36	Trunk_3
Link	STM-40-41	Trunk_3
Link	STM-41-43	Trunk_3
Link	STM-42-43	Trunk_3
Link	STM-42-72	Trunk_2
Link	STM-43-44	Trunk_3
Link	STM-44-47	Trunk_3
Link	STM-4-5	Trunk_4
Link	STM-45-46	Trunk_3
Link	STM-46-47	Trunk_3
Link	STM-47-48	Trunk_3
Link	STM-48-50	Trunk_3
Link	STM-49-50	Trunk_3
Link	STM-50-51	Trunk_3
Link	STM-51-52	Trunk_3
Link	STM-5200-57	Trunk_3
Link	STM-52-54	Trunk_3
Link	STM-53-54	Trunk_3
Link	STM-53-80	Trunk_2
Link	STM-54-55	Trunk_3
Link	STM-55-56	Trunk_3
Link	STM-5-6	Trunk_4
Link	STM-56-61	Trunk_3
Link	STM-57-58	Trunk_3
Link	STM-58-59	Trunk_3
Link	STM-59-60	Trunk_3
Link	STM-60-61	Trunk_3
Link	STM-61-62	Trunk_3
Link	STM-63-65	Trunk_2
Link	STM-6400-69	Trunk_2
Link	STM-64-65	Trunk_2
Link	STM-65-66	Trunk_2
Link	STM-66-67	Trunk_2
Link	STM-6-7	Trunk_4
Link	STM-67-68	Trunk_2
Link	STM-68-73	Trunk_2
Link	STM-69-70	Trunk_2
Link	STM-7000-67	Trunk_2
Link	STM-70-71	Trunk_2
Link	STM-7-10	Trunk_4
Link	STM-71-72	Trunk_2
Link	STM-72-73	Trunk_2
Link	STM-73-75	Trunk_2
Link	STM-74-49	Trunk_3

```
Link       STM-74-75         Trunk_2
Link       STM-75-76         Trunk_2
Link       STM-76-77         Trunk_2
Link       STM-7700-80       Trunk_2
Link       STM-77-78         Trunk_2
Link       STM-78-79         Trunk_2
Link       STM-79-83         Trunk_2
Link       STM-80-81         Trunk_2
Link       STM-81-82         Trunk_2
Link       STM-82-83         Trunk_2
Link       STM-83-84         Trunk_2
Link       STM-85-63         Trunk_2
Link       STM-8-57          Trunk_3
Link       STM-85-86         Trunk_2
Link       STM-86-87         Trunk_2
Link       STM-87-88         Trunk_2
Link       STM-88-89         Trunk_2
Link       STM-8-9           Trunk_4
Link       STM-89-90         Trunk_2
Link       STM-90000-92      Trunk_1
Link       STM-9000-27       Trunk_4
Link       STM-90-67         Trunk_2
Link       STM-9-10          Trunk_4
Link       STM-91-68         Trunk_2
Link       STM-91-92         Trunk_1
Link       STM-92-94         Trunk_1
Link       STM-93-73         Trunk_2
Link       STM-93-94         Trunk_1
Link       STM-94-101        Trunk_1
Link       STM-95-96         Trunk_1
Link       STM-96-97         Trunk_1
Link       STM-97-98         Trunk_1
Link       STM-98-99         Trunk_1
Link       STM-99-100        Trunk_1

[MAP]
DIMENSIONS       361115.34825     5012597.62695    362014.85675
5013309.87805
UNITS            Meters

[COORDINATES]
;;Node           X-Coord            Y-Coord
;;-------------- ------------------ ------------------
MH-1             361365.154         5013103.419
MH-10            361357.523         5012760.513
MH-100           361772.438         5013080.54
MH-101           361765.346         5013077.404
MH-102           361790.775         5013020.788
MH-10200         361790.592         5013020.707
MH-103           361895.933         5013067.482
MH-104           361866.915         5013054.597
MH-105           361889.417         5013004.411
MH-106           361910.538         5012957.309
MH-107           361907.068         5012948.199
```

MH-108	361673.955	5012968.913
MH-109	361698.107	5012979.593
MH-11	361158.598	5012935.345
MH-110	361738.23	5012997.456
MH-11000	361738.047	5012997.374
MH-111	361778.37	5013015.28
MH-11100	361778.188	5013015.198
MH-112	361799.08	5012964.297
MH-11200	361799.263	5012964.378
MH-113	361731.222	5012897.64
MH-11300	361731.419	5012897.674
MH-114	361775.774	5012905.451
MH-115	361820.15	5012911.565
MH-116	361901.437	5012945.735
MH-117	361680.282	5012896.658
MH-118	361708.499	5012828.898
MH-119	361718.011	5012825.074
MH-12	361194.075	5012965.632
MH-120	361756.487	5012833.704
MH-121	361839.51	5012846.071
MH-122	361929.967	5012884.826
MH-123	361969.884	5012902.552
MH-124	361945.436	5012891.696
MH-125	361959.629	5012860.043
MH-13	361209.589	5012962.001
MH-14	361237.037	5012897.848
MH-15	361261.603	5012838.412
MH-1500	361261.788	5012838.489
MH-16	361284.635	5012782.652
MH-17	361310.224	5012719.387
MH-18	361321.268	5012708.058
MH-19	361375.329	5012715.678
MH-2	361309.315	5013056.125
MH-20	361156.235	5012925.302
MH-21	361182.359	5012863.555
MH-22	361208.541	5012802.016
MH-23	361231.172	5012745.022
MH-24	361262.695	5012669.138
MH-25	361298.206	5012647.908
MH-26	361336.932	5012643.204
MH-27	361449.473	5012688.345
MH-28	361444.7	5012676.696
MH-29	361398.883	5012655.936
MH-3	361257.995	5013013.321
MH-31	361456.214	5013275.946
MH-32	361427.987	5013252.393
MH-3200	361428.065	5013252.209
MH-33	361397.148	5013226.61
MH-34	361394.728	5013216.449
MH-35	361424.77	5013145.572
MH-36	361454.375	5013074.706
MH-37	361478.08	5013017.941
MH-38	361461.673	5013172.647
MH-39	361517.545	5013102.756

MH-4	361255.697	5013003.444
MH-40	361495.189	5013092.829
MH-4000	361495.006	5013092.748
MH-41	361518.972	5013036.099
MH-42	361562.656	5012988.206
MH-43	361542.756	5012979.369
MH-44	361501.784	5012961.176
MH-45	361377.381	5013098.704
MH-46	361411.146	5013017.201
MH-47	361445.06	5012935.988
MH-48	361462.872	5012891.353
MH-49	361484.852	5012884.03
MH-5	361285.302	5012936.678
MH-50	361471.883	5012882.692
MH-51	361469.088	5012870.014
MH-52	361491.328	5012819.928
MH-5200	361491.145	5012819.847
MH-53	361543.905	5012843.275
MH-54	361518.716	5012832.09
MH-55	361551.84	5012748.666
MH-56	361547.756	5012738.272
MH-57	361460.184	5012806.099
MH-58	361477.173	5012763.663
MH-59	361497.314	5012717.713
MH-6	361316.598	5012861.124
MH-60	361509.61	5012715.175
MH-61	361526.032	5012725.118
MH-63	361581.368	5013268.019
MH-64	361465.145	5013277.503
MH-6400	361465.223	5013277.318
MH-65	361514.733	5013273.126
MH-66	361541.385	5013209.759
MH-67	361575.469	5013128.476
MH-68	361598.006	5013074.476
MH-69	361500.303	5013193.989
MH-7	361337.217	5012811.206
MH-70	361535.32	5013110.649
MH-7000	361535.503	5013110.73
MH-71	361559.03	5013053.886
MH-72	361582.735	5012997.122
MH-73	361623.921	5013015.41
MH-74	361582.758	5012928.419
MH-75	361654.108	5012960.102
MH-76	361677.844	5012902.749
MH-77	361625.717	5012879.603
MH-7700	361625.535	5012879.522
MH-78	361654.5	5012806.877
MH-79	361649.839	5012795.334
MH-8	361437.479	5012796.017
MH-80	361567.204	5012853.621
MH-81	361597.004	5012779.785
MH-82	361610.401	5012775.107
MH-83	361622.244	5012781.746
MH-85	361589.86	5013261.843

```
MH-86            361608.681         5013215.68
MH-87            361617.734         5013212.071
MH-88            361642.192         5013222.936
MH-89            361654.326         5013218.317
MH-9             361411.512         5012784.486
MH-90            361674.778         5013172.574
MH-9000          361411.585         5012784.3
MH-90000         361674.859         5013172.391
MH-91            361670.641         5013106.729
MH-92            361698.508         5013119.103
MH-93            361698.521         5013048.536
MH-94            361724.862         5013059.718
MH-95            361672.446         5013196.32
MH-96            361713.058         5013214.34
MH-97            361725.42          5013209.578
MH-98            361751.311         5013151.24
MH-99            361777.198         5013092.901
MH-126           361973.97          5012828.058
MH-30            361405.529         5012630.002
MH-62            361539.895         5012702.429
MH-84            361635.023         5012758.53

[VERTICES]
;;Link           X-Coord            Y-Coord
;;-------------- ------------------ ------------------
```

J.F. Sabourin and Associates Inc.
52 Springbrook Drive,
Ottawa, ON K2S 1B9
T 613-836-3884 F 613-836-0332

jfsa.com

Ottawa. ON
Paris. ON
Gatineau. QC
Montréal. QC
Québec. QC

March 08, 2021 Project Number: 1474

David Schaeffer Engineering Ltd
120 Iber Road, Unit 103
Ottawa, Ontario
K2S 1E9

Attention: Steve Pichette, P.Eng.

Subject: Review of Quantity Control Requirement for Jock River-Reach One

Introduction

Phase 2 of the Barrhaven Conservancy Development (aka Conservancy East) is located in Barrhaven, Ontario, north of the Jock River, south of the Fraser Clarke Creek and east of the Foster Creek. The proposed development is approximately 59.26 ha that will primarily comprise of single and townhouse residential lots. As a part of the City of Ottawa's review of the proposed development draft plan of Phase 2 of the Barrhaven Conservancy Development, submitted in December 2020, it is proposed that flood quantity control measures will not need to be implemented as a part of this development. This assumption is based on the work completed by Stantec in June 2007 in the "Jock River Reach One Subwatershed Study" which concluded that for future developments within Reach 1 of the Jock River: "No quantity control storage is required for flood control purposes as the hydrograph from the subwatershed will peak before the upstream peak in the Jock River" and that "No erosion control storage is required to maintain the predevelopment in-stream erosion condition". Although this study did not consider the future development of the Barrhaven Conservancy Lands, and as such the modelling completed by Stantec has been updated by JFSA to reflect these changes. The following memo outlines data sources, assessed scenarios, assumptions, and conclusions of this independent Jock River Reach One study.

It is noted that RVCA is currently engaging in a formal update/review of the Jock River Reach One Subwatershed Study, with the findings of this study having the potential to affect the above-noted design criteria. While that study is underway J.F. Sabourin and Associates Inc. (JFSA) has completed an independent Jock River - Reach One study to re-assess/confirm that the assumptions presented in the original 2007 study by Stantec are still valid, as any changes to this conclusion could greatly impact the current BCDC Phase 2 development plan.

Background Data

The following outlines all the model and data sources used in this analysis:

- *"Jock River Floodplain Mapping Report"*, (2005 - PSR Group Ltd. & JFSA)
- *"Jock River Reach One Subwatershed Study Final Report",* (2007 – Stantec)
- *"Corrigan Stormwater Management Facility Stormwater Management Report and Design Brief"*, (2010 - IBI Group)
- *"Citi Gate, Highway 416 Employment Lands, Servicing Study and Stormwater Management Report (O'Keefe SWM)",* (2012 – Novatech)
- *"Foster Stormwater Management Facility, Environmental Study Report",* (2013 - CH2MHill)
- *"Todd Pond Model Keeper Analysis (Re-Assessment of Existing System Capacity)"*, (2015 – JFSA)

- *"CitiGate 416 Corporate Campus Detailed Servicing and Stormwater Management Report (Phase 1)"*, (2015 – Novatech)
- *"Kennedy-Burnett Stormwater Management Facility Retrofit, Detailed Design Report"*, (2020 – Novatech)
- *"Half Moon Bay South / Addendum to April 2015 Todd Pond Model Keeper Analysis, Re-Assessment of Existing System Capacity Report" (2020 - JFSA).*

Model Development/Scenarios

The following section outlines the various hydrologic model scenarios developed as a part of this work, with a brief description of the data sources used for each scenario and how they have been incorporated into the existing Jock River subwatershed hydrologic model.

Model 1 - Jock River Floodplain Model – JFSA, 2005

This hydrologic model was developed as a part of the floodplain mapping study of the Jock River completed in 2005. The hydrologic model of the Jock River was developed by JFSA using SWMHYMO, with independent models developed to simulate both summer and spring events. Both models were calibrated to field measured flows, recorded at the Water Survey Canada Flow Gauge at Moodie Drive. These models function as the basis for which all future models (both by JFSA and others) have been built on. Refer to Figure 1 (JFSA, 2005) for an overview of the subcatchments for reach one in this model, with full SWMHYMO input and summary files provided in Attachment A.

Model 2 – Jock River Reach One Model – Stantec, 2007

The hydrologic analysis completed by Stantec in 2007 built upon the JFSA 2005 floodplain mapping modelling. As a part of the Stantec work, the lower reach of the Jock River (3,176 ha) which was represented as a single subcatchment in the 2005 study was subdivided into thirteen (13) subcatchments to better delineate the drainage areas to the various tributaries (O'Keefe, Fraser, Foster, Todd, Corrigan and Clarke) and to also provide a better representation of the existing development areas (Kennedy Burnett, Chapman Mills, Jockvale and Hearts Desire). The remaining natural/undeveloped areas within the Jock River corridor were subdivided into three smaller (3) sub-catchments. Refer to Figure 2 (Stantec, 2007) for an overview of the subcatchments for reach one in this model, with full SWMHYMO input and summary files provided in Attachment B.

As mentioned above from this study, it was concluded that developments located in the lower reaches of the Jock River do not require any quantity control storage for flood control purposes as the hydrograph from the subwatershed will peak before the upstream peak in the Jock River and that no erosion control storage is required to maintain the pre-development in-stream erosion conditions.

Model 3 – Jock River Reach One Model Update – JFSA, 2021

As a part of the study outlined in this report, the 2007 Stantec SWMHYMO model of the Jock River was updated to reflect (as best as possible with the available information) proposed, approved and potential future developments, since the 2007 study.

At the time of the 2007 study, it was assumed that the floodplain of reach one of the Jock River (from Highway 416 to Greenbank Road) would not be filled and developed. Furthermore, the assumptions that were made in 2007 for the total imperviousness of future developments are not reflective of the actual constructed conditions observed in 2021; for example, the total impervious area for the Todd drainage area was assumed to be 43% in the 2007 study, while based on latest aerial photography it appears that the imperviousness for this area is closer to 58.5%). Additionally, SWM quantity controls were implemented in some tributaries within Reach One (e.g., O'Keefe, Foster and Kennedy-Burnett) to respect the hydraulic capacity of the local watercourses or other existing hydraulic constraints.

As outlined in the Background Data section of this memo, data from various reports and studies were collected and used to update Stantec's 2007 model, to best reflect existing conditions and known approved and planned development projects. As such, the thirteen (13) subcatchments of the 2007 Stantec model have been further discretized into one hundred ten (110) subcatchments, with numerous additional major system storage, SWM Ponds, and channel routing commands added. This updated existing condition model is reflective of current 2021 conditions, which assumes that the lower Jock River floodplain is undeveloped. It should also be noted that only subcatchments downstream of Highway 416 have been updated as a part of this analysis. Updates to other catchments of the Jock River further upstream, such as the Monahan Drain, Hobbs Creek, King Creek, and development areas in Richmond, where additional new information may be available, have not been included in the model updates at this time. Refer to Figure 3 for an overview of the subcatchments for reach one in this model, with full SWMHYMO input and summary files been provided in Attachment C, detailed schematics of the subcatchments updated as a part of this study have been provided in Attachment F.

Note that Novatech's PCSWMM model of the Kennedy-Burnett area was used to create a detailed SWMHYMO model of the same area. In creating this SWMHYMO model it was found that the 100-year peak outflows from the Kennedy Burnett facility were 1.4 times higher than that reported in the Novatech PCSWMM model. While it is expected that different modelling software will produce slightly different results, this difference is significant and should be investigated further; although it is unlikely that this difference is expected to change the fundamental conclusions of this analysis.

Model 4A & 4B – Jock River Reach One Future Conditions (without and with quantity SWM controls) – JFSA, 2021

Two additional models (4A and 4B) were created (which built on model 3) to evaluate the impacts of developing portions of the lower Jock River floodplain (from Highway 416 to Greenbank Road). These lands make up approximately 156 ha and would include BCDC and other properties on the south side of the Jock River. Model 4A assumes that these lands would be developed without any SWM quantity controls and Model 4B assumes that the lands would be developed with SWM Post to Pre-development quantity controls. Refer to Figure 4 for an overview of the subcatchments for reach one in these models, with full SWMHYMO input and summary files for scenarios 4A and 4B provided in Attachment D & E, respectively.

Results

All hydrologic models were run using a 24 hours SCS storm for the 2-to-100-year events. Note that this analysis focuses on this particular rainfall event as for developed areas the summer rainfall events are more critical than the spring rainfall plus snowmelt conditions. Hence, only the summer peak flows have been summarized and compared for the various scenarios below, as the flow contributions from the developments in the lower Jock River under the spring rainfall + snowmelt event are negligible compared to the flows upstream from the greater Jock River. It is further noted that the same design storms were used in all models.

Peak flows at key locations along Reach One of the Jock River have been extracted from the various hydrologic models and provided in the following section. As a part of this analysis, 5 key locations on the Jock River have been selected to compare the simulated peak flows and are as follows: Highway 416, Borrisokane Road, Greenbank Road, Jockvale Road and the Jock River's confluence with the Rideau River. Note that for the older models (JFSA 2005 & Stantec 2007) results have only been provided at some locations, as these original models were not discretized to this higher level of detail. Additionally, the Stantec 2007 model did not assess flows on the Jock River for the 10- and 50-year events at any locations.

Table 1: Comparison of Summer Peak Flows (m^3/s) at Highway 416 (52483.00 ha)

Scenario	Return Period					
	2-Year	5- Year	10-Year	25-Year	50-Year	100-Year
Model 1: 2005 Floodplain Study	45.676	66.292	82.076	104.643	122.469	141.415
Model 2: Stantec 2007 Reach One Analysis	45.789	66.413	n/a	104.834	n/a	141.853
Model 3: Updated Model 2 to current/ approved conditions	46.294	67.222	83.235	106.109	124.249	143.580
Model 4A: Model 3 with BCDC & others w/o SWM	46.294	67.222	83.235	106.109	124.249	143.580
Model 4B: Model 3 with BCDC & others with SWM	46.294	67.222	83.235	106.109	124.249	143.580

From Table 1 above it is seen that the peak flows on the Jock River at Highway 416 for Models 3, 4A and 4B are higher than in Models 1 and 2. This is because the computational time step in the updated models was reduced from 5 - 10 minutes to 1 minute. This change was necessary to provide stable results in the various models, especially with the additional ROUTE CHANNEL commands that have been added to the updated models. There were no other changes made to the models upstream of Highway 416.

Table 2: Comparison of Summer Peak Flows (m^3/s) at Borrisokane Road (53577.82 ha)

Scenario	Return Period					
	2-Year	5- Year	10-Year	25-Year	50-Year	100-Year
Model 1: 2005 Floodplain Study	n/a	n/a	n/a	n/a	n/a	n/a
Model 2: Stantec 2007 Reach One Analysis	46.817	68.124	n/a	107.402	n/a	144.892
Model 3: Updated Model 2 to current/ approved conditions	47.379	69.117	85.613	108.988	127.740	147.849
Model 4A: Model 3 with BCDC & others w/o SWM	47.426	68.998	85.561	109.064	127.650	147.535
Model 4B: Model 3 with BCDC & others with SWM	47.599	69.319	85.870	109.449	128.055	147.939

From Table 2 it is seen that the peak flows on the Jock River at Borrisokane are generally lower in model 4A (developed without SWM controls) than under existing conditions (Model 3). The inclusion of SWM controls for these future developments results in the peak flows increasing from existing conditions for all return periods at this location. Note that the increase in flows at this location between the Stantec model (model 2) and the JFSA existing conditions model (model 3) again is due to the greater discretization of subcatchments at Borrisokane Road in the JFSA model. For example, in the Stantec model, the subcatchment that represents the currently undeveloped lands along the Jock River is represented as a single subcatchment (S-1). Where the JFSA updated model represents these lands as 14 individual subcatchments, all discharging to their respective locations within the Jock River (e.g. O'Keefe Creek, Foster Creek & Borrisokane Road).

Table 3: Comparison of Summer Peak Flows (m^3/s) at Greenbank Road (54717.80 ha)

Scenario	Return Period					
	2-Year	5- Year	10-Year	25-Year	50-Year	100-Year
Model 1: 2005 Floodplain Study	n/a	n/a	n/a	n/a	n/a	n/a
Model 2: Stantec 2007 Reach One Analysis	49.195	71.220	n/a	111.172	n/a	149.236
Model 3: Updated Model 2 to current/ approved conditions	49.055	70.826	86.895	110.282	128.564	147.488
Model 4A: Model 3 with BCDC & others w/o SWM	48.599	69.773	85.389	103.842	126.050	144.531
Model 4B: Model 3 with BCDC & others with SWM	48.982	70.171	85.928	103.651	126.537	144.894

From Table 3 it is seen that peak flows on the Jock River at Greenbank Road are the lowest without SWM controls in place (Model 4A). With SWM controls in place, the peak flows are lower than the existing conditions, but not as low as when SWM controls are not implemented. Note that the JFSA existing conditions model (model 3) is presenting peak flows lower than the Stantec model (model 2) at this location, again this is due to the greater discretization in the JFSA model as discussed above.

Table 4: Comparison of Summer Peak Flows (m^3/s) at Jockvale Road (55476.26 ha)

Scenario	Return Period					
	2-Year	5- Year	10-Year	25-Year	50-Year	100-Year
Model 1: 2005 Floodplain Study	n/a	n/a	n/a	n/a	n/a	n/a
Model 2: Stantec 2007 Reach One Analysis	49.870	72.143	n/a	112.074	n/a	150.033
Model 3: Updated Model 2 to current/ approved conditions	49.619	72.224	88.294	111.989	130.865	149.819
Model 4A: Model 3 with BCDC & others w/o SWM	49.482	71.017	86.165	105.082	128.174	146.840
Model 4B: Model 3 with BCDC & others with SWM	49.606	71.408	86.690	104.765	128.229	147.027

From Table 4 is seen that the peak flows at Jockvale Road are generally at their lowest without SWM controls in place, and that either implementing or not implementing SWM controls for future developments results in peak flows at this location being less than existing conditions.

Table 5: Comparison of Summer Peak Flows (m^3/s) at Outlet of Jock River (55579.20 ha)

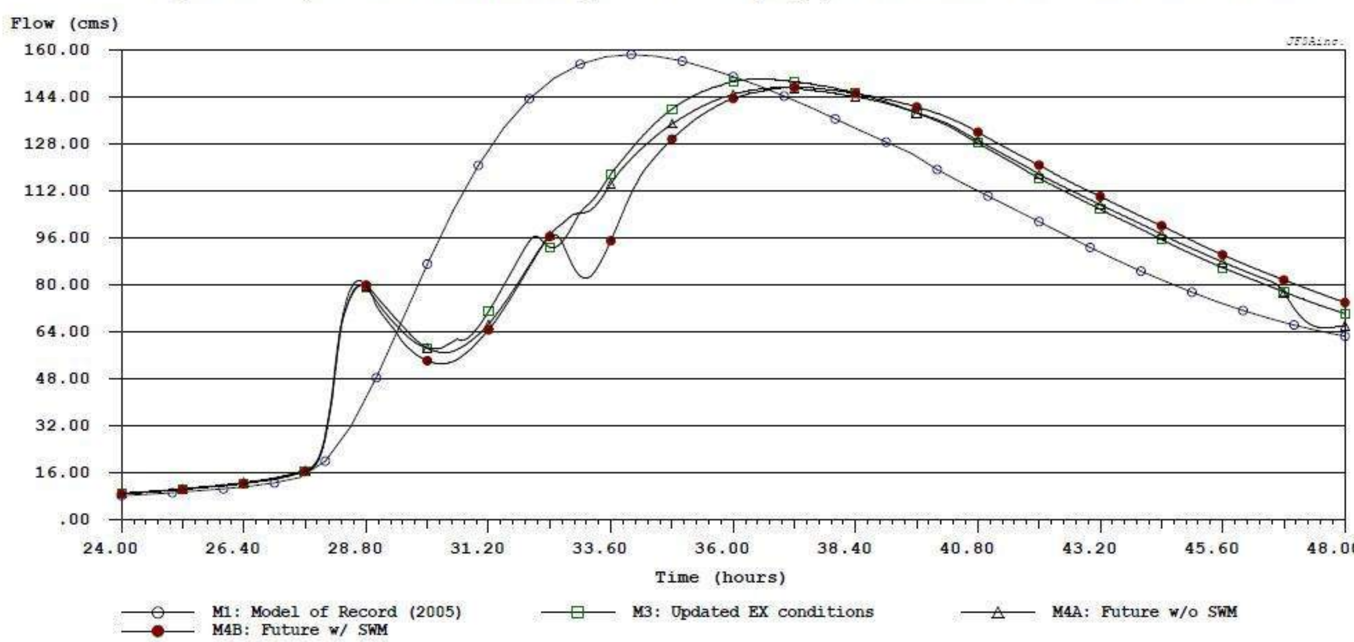
Scenario	Return Period					
	2-Year	5- Year	10-Year	25-Year	50-Year	100-Year
Model 1: 2005 Floodplain Study	49.16	72.08	89.96	115.84	136.46	158.42
Model 2: Stantec 2007 Reach One Analysis	50.78	73.65	n/a	113.97	n/a	157.69
Model 3: Updated Model 2 to current/ approved conditions	49.72	72.36	88.45	112.2	131.12	150.12
Model 4A: Model 3 with BCDC & others w/o SWM	49.58	71.17	86.35	105.27	128.42	147.10
Model 4B: Model 3 with BCDC & others with SWM	49.70	71.54	86.85	104.96	128.45	147.28

From Table 5 it is seen that the peak flows on the Jock River at the confluence with the Rideau River are generally at their lowest without SWM controls in place, and that either implementing or not implementing SWM controls for future developments results in peak flows at this location to be less than existing conditions.

Discussion

Although not initially obvious, the reason that future urban developments within Reach One of the Jock River are decreasing peak flows on the Jock River is because developing land not only affects the peak of the hydrograph but also the overall shape. Figure A below provides a comparison of the simulated hydrographs at the Jock River's confluence with the Rideau River from the various model scenarios. During any rainfall event, the runoff from the existing and future developments within Reach One will have already peaked and decayed before the peak flows arrive at this location from the upstream drainage area. For the 100-Year SCS storm, the peak from the development in Reach One can be seen in the figure below at around 28 hours, while the peak flow on the Jock River from the upstream drainage areas occurs at around 36-37 hours, this is approximately a 9-hour difference in timing. As such, implementing SWM measures for developments in the lower portions of the Jock River will decrease peak flows from the development, but would also prolong the period of time during which they discharge into the Jock River, thus coinciding with flows from the greater Jock River, ultimately resulting in potential increases in peak flows on the Jock River. This is seen in the figure below with the future condition with SWM controls (Model 4B - Red Circles) having a higher flow in the tail than future conditions without SWM controls (Model 4A – Black Triangles). Note that the difference between Model 1 and all other scenarios is simply due to further discretization of subcatchments within Reach One.

Figure A: Comparison of simulated 100 yr Jock River hyrographs at the confluence with the Rideau River



Hydrograph Statistics:

Legend	Filename & Comment	Time Step (min)	Drainage Area (ha)	Peak Flow (cms)	Time to Peak (hrs)	Runoff Volume (mm)	Runoff Volume (cu.m)	Duration of flow (hrs)	Average flow (cms)
	N1.0100 : M1: Model of Record (2005)	30.00	55659.00	158.420	34.000	14.52	8.082E+06	24.000	93.538
	SN_N1.0100 : M3: Updated EX conditions	1.00	55579.20	150.120	36.533	14.24	7.914E+06	24.000	91.603
	SN_N1.0100 : M4A: Future w/o SWM	1.00	55579.20	147.102	36.917	14.12	7.848E+06	24.000	90.831
	SN_N1.0100 : M4B: Future w/ SWM	1.00	55579.19	147.276	37.250	14.03	7.798E+06	24.000	90.252

Conclusion

The hydrologic model developed as a part of the Jock River Reach One Subwatershed Study (Stantec 2007) has been updated to provide additional refinements in the lower reaches of the Jock River (downstream of Highway 416) and assumes the development of lands that were previously not considered in the 2007 analysis (e.g. Barrhaven Conservancy). Future development condition models were created with and without SWM controls assumed, and the peak flows extracted from these models at key locations along the lower Jock River. From this analysis, it was found that with these additional developments in the lower Jock River peak flows are generally less than existing conditions without SWM controls in place. Implementing SWM controls for these developments has also been found to generally decrease peak flows on the Jock River, but not at all locations and not to the same degree as without SWM controls. Ultimately these findings are consistent with the fundamental conclusions drawn in Stantec's 2007 Jock River Reach One study, which initially determined that for future developments within Reach One of the Jock River "No quantity control storage is required for flood control purposes as the hydrograph from the subwatershed will peak before the upstream peak in the Jock River" and that "No erosion control storage is required to maintain the pre-development in-stream erosion condition". Based on the results of the updated analysis outlined in this memo, it can confirm that the fundamental conclusions drawn in Stantec's 2007 for developments in reach one of the Jock River remain valid.

Yours truly,
J.F Sabourin and Associates Inc.

Jonathon Burnett, P.Eng
Water Resources Engineer

LICENSED PROFESSIONAL ENGINEER
J. J. BURNETT
100227734
PROVINCE OF ONTARIO

cc: J.F Sabourin, M.Eng, P.Eng
Director of Water Resources Projects

Figures

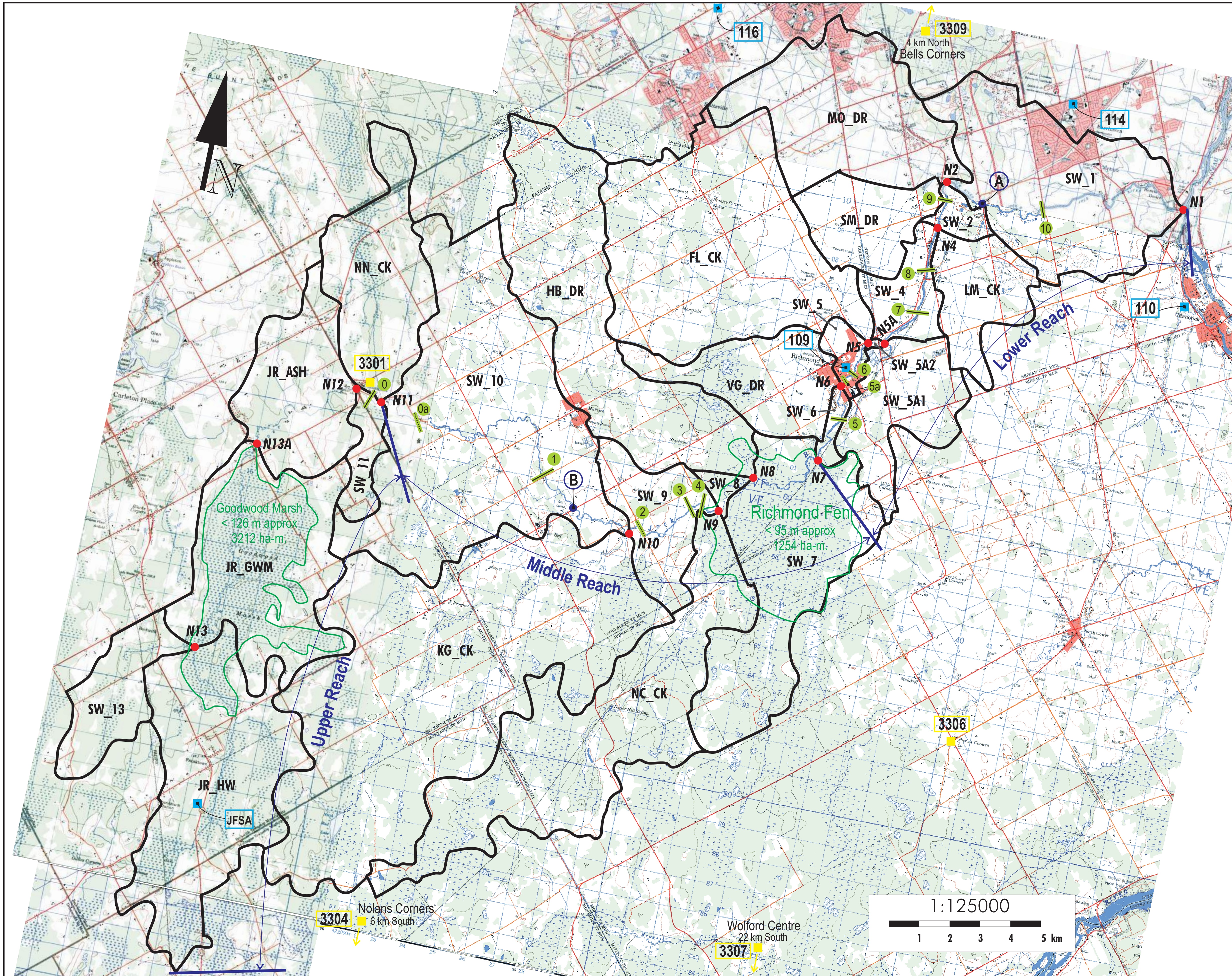
Figure 1: Model 1 – Jock River Floodplain Model – JFSA, 2005
Figure 2: Model 2 – Jock River Reach One Model – Stantec, 2007
Figure 3: Model 3 – Jock River Reach One Model Update - JFSA, 2021
Figure 4: Model 4A & 4B – Jock River Reach One Future Conditions - JFSA, 2021

Tables

Table 1: Summer Peak Flows at Highway 416
Table 2: Summer Peak Flows at Borrisokane Road.
Table 3: Summer Peak Flows at Greenbank Road
Table 4: Summer Peak Flows at Jockvale Road
Table 5: Summer Peak Flows at Outlet of Jock River

Attachments

Attachment A: Model 1 - SWMHYMO Input & Summary files
Attachment B: Model 2 - SWMHYMO Input & Summary files
Attachment C: Model 3 - SWMHYMO Input & Summary files
Attachment D: Model 4A - SWMHYMO Input & Summary files
Attachment E: Model 4B - SWMHYMO Input & Summary files
Attachment F: Updated Subcatchment Schematics & Tables



Legend:

Watershed	
Bogs (Reservoir)	
Nodes	
Flow gauges	
Rain gauges	
Snow course stations	
River Cross-Sections (based on topo. maps)	
River Cross-Sections adjusted with field data	
Reaches limits	

Flow gauges ID

- (A) 02LA007- Jock River near Richmond
- (B) Jock River at Franktown Rd

Rain gauges ID

109	Richmond
110	Manotick
114	Barrhaven
116	Maple Grove
JFSA	JFSA Inc, Temporary Rain Gauge 2003

Snow course stations ID

3301	Ashton
3304	Nolans Corners
3306	Pierces Corners
3307	Bells Corners
3309	Wolford Centre

Client:

RIDEAU VALLEY CONSERVATION AUTHORITY

Project:

Jock River Flood Plain Mapping Study

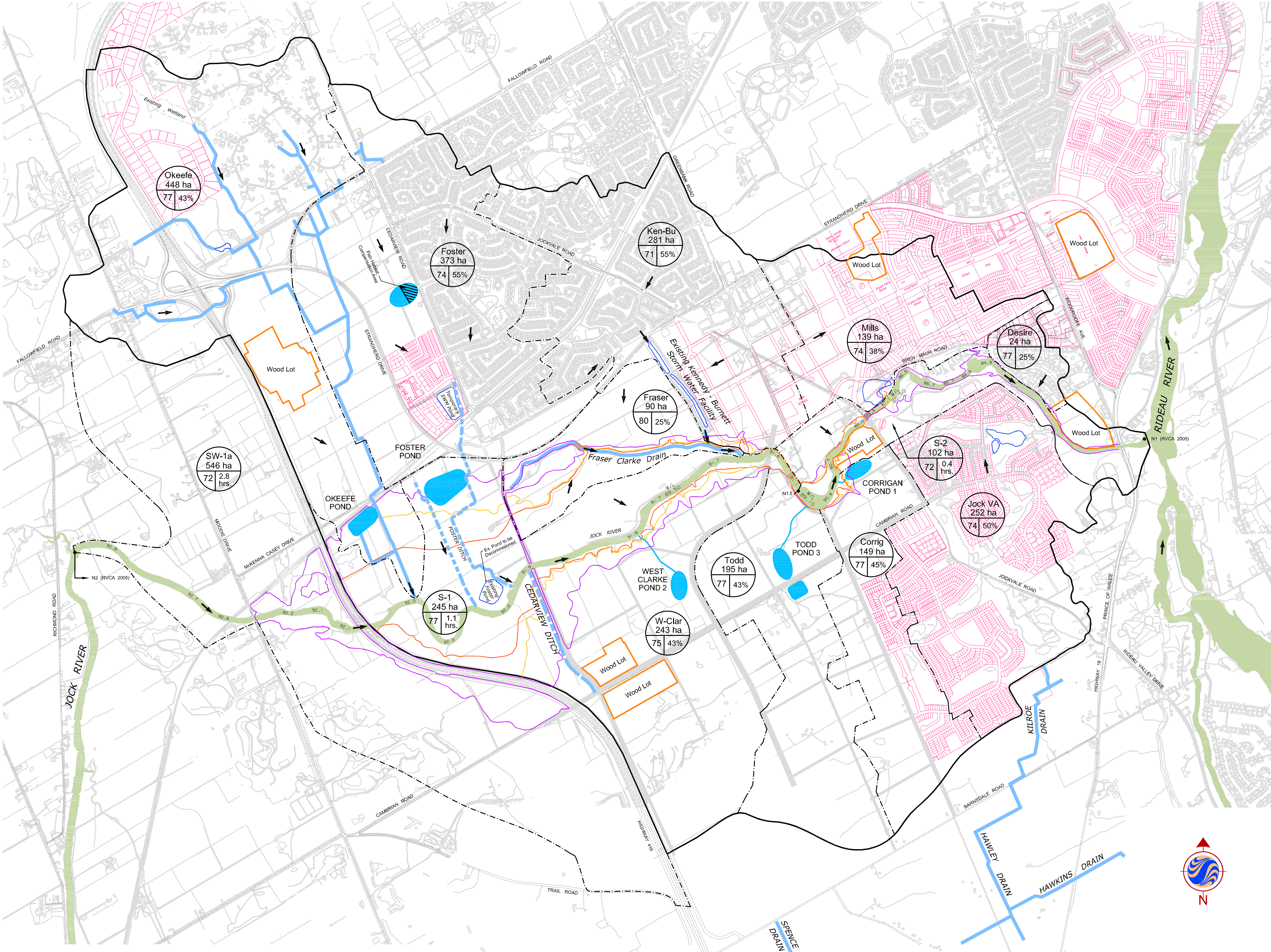
Title:

Watershed Delineation

J.F. Sabourin & Associates Inc.
WATER RESOURCES AND ENVIRONMENTAL CONSULTANTS
OTTAWA (613) 727-5199
GATINEAU (819) 243-6858

Figure 1

Ref. File: Base Map Jock River B.cdr



Stantec

Stantec Consulting Ltd.
1505 Laperriere Avenue
Ottawa ON Canada
K1Z 7T1
Tel. 613.722.4420
Fax. 613.722.2799
www.stantec.com

Ottawa

Legend

- Existing SWM Facility
- Proposed Stormwater Facility
- Proposed Pond Outlet
- Jock River Tributary (Municipal Drain)
- Jock River Tributary (Non-Municipal Drain)
- Watershed Boundary
- 91.7 Regulatory Flood Level
- W/L 89.50 Normal Water Level
- Woodlot Limits
- Sub-drainage Area Limit
- Desire 24 ha 77 50% hrs.: Sub-drainage Area Name; Sub-drainage Area Size; % Impervious or Time to Peak (hours); SCS Curve Number
- Application Plans Under Review
- 10 Year Flood Line
- 25 Year Flood Line
- 100 Year Flood Line

1	FINAL REPORT	BCB	N.G.	JUNE 2007
Revision		By	Appd.	YY.MM.DD

File Name: Dwn. Chkd. Dsgn. YY.MM.DD

Seal

Client/Project

JOCK RIVER REACH ONE SUB-WATERSHED STUDY
Ottawa ON Canada

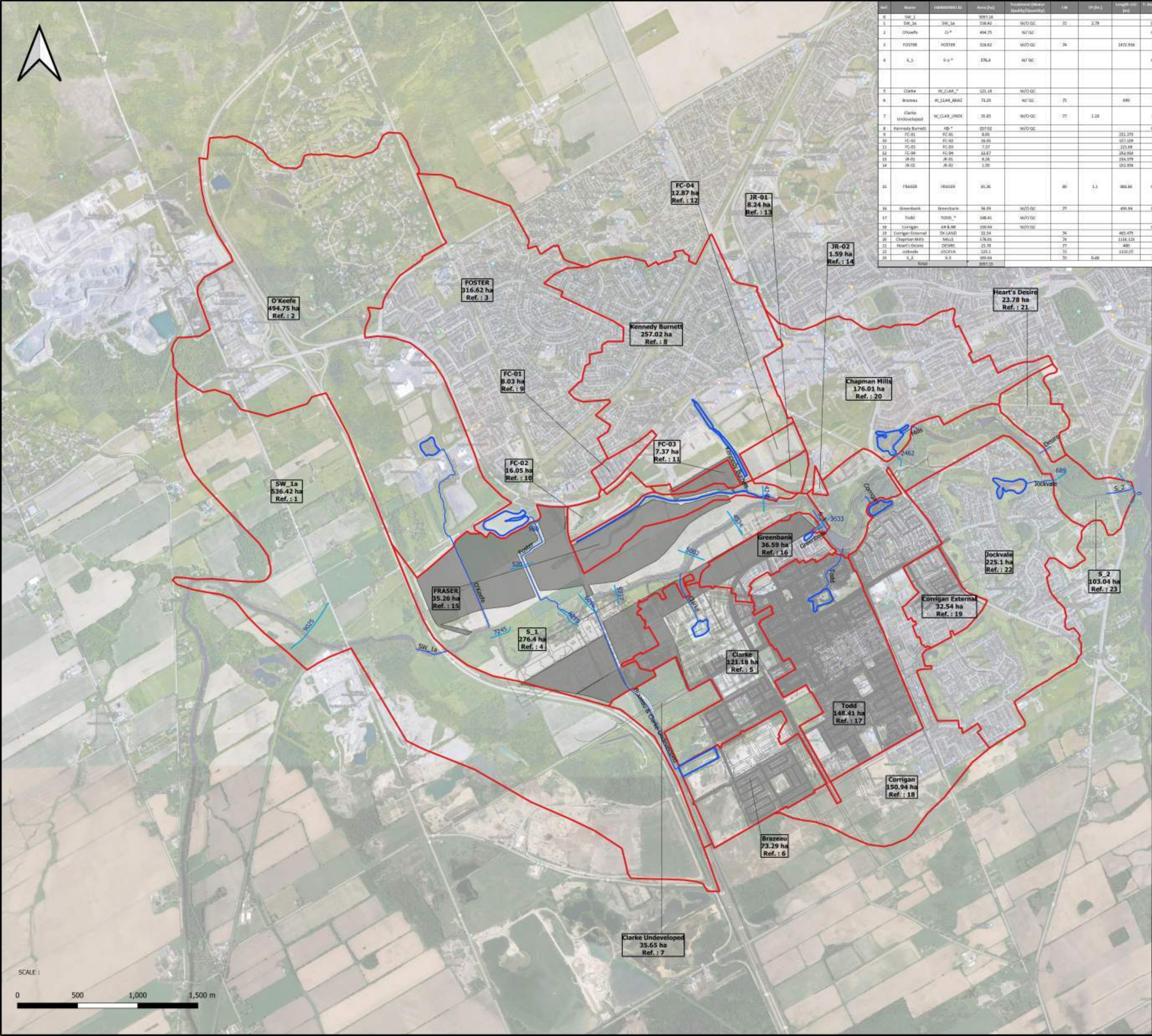
Title

PROPOSED CONDITIONS HYDROLOGIC MODEL DRAINAGE BOUNDARIES

Project No. 60400414 Scale 1:10,000 0 100 300 500m

Drawing No. Sheet 1 of 1 Revision 1

Figure 2



Ref.	Name	SWMHYMO ID	Area (ha)	Treatment (Water Quality/Quantity)	CN	TP (hr)	Length LGI (m)	T. Imperv. (TP (hr))	XIMP	Type	Major System to	Minor System to	Figure	Table	Schematic
0	SW_1		3097.14												
1	SW_1a	SW_1a	536.42	W/O QC	72	2.79		[2.79]		NASHYD	Jock River at Station 7245				
2	O'Keefe	O-*	494.75	W/ QC				0.575		STANDHYD	Jock River at Station 8235		Figure F1 - O'Keefe Sub-catchments	Table F1 - O'Keefe Sub-catchments	Schematic F1 - O'Keefe Sub-catchments
3	FOSTER	FOSTER	316.62	W/O QC	74		1472.956	0.35	0.55	STANDHYD	Jock River at Station 8056		Figure F2 - Foster Sub-catchment	Table F2 - Foster Sub-catchment	
4	S_1	S-1-*	276.4	W/ QC				0.646		STANDHYD	Jock River at Station 5802		Figure 4A - S-1 & Fraser Sub-catchments	Table 4A - S-1 & Fraser Sub-catchments	
													Figure 4B - S-1 & Fraser Sub-catchments	Table 4B - S-1 & Fraser Sub-catchments	
5	Clarke	W_CLAR_*	121.18	W/O QC				0.61		STANDHYD	Jock River at Station 5062		Figure F3 - Clarke & Brazeau Sub-catchments	Table F3-1 - Clarke Sub-catchments	
6	Brazeau	W_CLAR_BRAZ	73.29	W/ QC	75		699	0.65	0.6	STANDHYD	Jock River at Station 8056				
7	Clarke Undeveloped	W_CLAR_UNDE	35.65	W/O QC	77	1.18		[1.1]		NASHYD	Jock River at Station 5062			Figure F3-2 - Brazeau Sub-catchment	
8	Kennedy Burnett	KB-*	257.02	W/O QC				0.357		STANDHYD	Jock River at Station 3633		Figure F4 - Kennedy Burnett Sub-catchments	Table F4 - Kennedy Burnett Sub-catchments	
9	FC-01	FC-01	8.03				231.373	0.47	0.47	STANDHYD	Jock River at Station 3633				
10	FC-02	FC-02	16.05				327.109	0.93	0.93	STANDHYD	Jock River at Station 3633				
11	FC-03	FC-03	7.37				221.69	0.64	0.84	STANDHYD	Jock River at Station 3633				
12	FC-04	FC-04	12.87				292.918	0.64	0.64	STANDHYD	Jock River at Station 3633				
13	JR-01	JR-01	8.24				234.379	0.64	0.64	STANDHYD	Jock River at Station 3633				
14	JR-02	JR-02	1.59				102.958	0.64	0.84	STANDHYD	Jock River at Station 3633				
15	FRASER	FRASER	35.26		80	1.1	666.84	0.565	0.565	STANDHYD	Jock River at Station 3633		Figure 4A - S-1 & Fraser Sub-catchments	Table 4A - S-1 & Fraser Sub-catchments	
													Figure 4B - S-1 & Fraser Sub-catchments	Table 4B - S-1 & Fraser Sub-catchments	
16	Greenbank	Greenbank	36.59	W/O QC	77		491.96	0.662	0.639	STANDHYD	Jock River at Station 2462				
17	Todd	TODD_*	148.41	W/O QC				0.55		STANDHYD	Jock River at Station 2462		Figure F5 - Todd Sub-catchments	Table F5 - Todd Sub-catchments	
18	Corrigan	AR & RR	150.94	W/O QC				0.541		STANDHYD	Jock River at Station 2462		Figure F6 - Corrigan Sub-catchments	Table F6 - Corrigan Sub-catchments	
19	Corrigan External	EX-LAND	32.54		74		465.475	0.5	0.5	STANDHYD	Jock River at Station 2462				
20	Chapman Mills	MILLS	176.01		74		1118.123	0.38	0.38	STANDHYD	Jock River at Station 689				
21	Heart's Desire	DESIRE	23.78		77		400	0.25	0.25	STANDHYD	Jock River at Station 0				
22	Jockvale	JOCKVA	225.1		72		1310.55	0.5	0.5	STANDHYD	Jock River at Station 0				
24	S_2	S-2	103.04		72	0.49		[0.41]		NASHYD	Rideau River				
Total			3097.15												

Legend
- Channel Cross Section
- Sub-catchments
- SW_1
- SWMF Drains
- SWMF ponds

File name:

Figure 3 - Overall Jock River Lower Reach one Sub-catchments.pdf

XS 4534 — Cross Section at station 4534

SW_1a — Area ID
536.42 ha — Area (ha)
Ref. 1 — Reference Number

J.F. Sabourin and Associates Inc.
WATER RESOURCES AND ENVIRONMENTAL CONSULTANTS
52 Springbrook Drive
Ottawa, ON, K2S 1B9
(613) 836-3884
www.jfsa.com

DSEL
david schaeffer engineering ltd

PROJECT :

BCDC - Quantity Control Study

TITLE :

Figure 3 - Overall Jock River Lower Reach one Sub-catchments

Table 3 - Overall Jock River Lower Reach one Sub-catchments

PROJECT NO.	1474-16
DRAWN:	MM
DATE:	Mar. 2021

Legend

Channel Cross Sections

S-1 Sub-catchments and Fraser Sub-catchments

- S-1-A
- S-1-B
- S-1-D1
- S-1-D2
- S-1-D3
- S-1-D4
- S-1-D5
- S-1-D6
- S-1-D7
- S-1-D8
- S-1-FO-D1
- S-1-FO-D2
- S-1-FO-F-D
- S-1-Okeefe
- FRASER-DRN
- FRASER-D

Google Hybrid

File name:

20210304_S-1_Fraser_Schematic-Model4A.pdf

XS 3633 — Cross Section at station 3633

S-1-A → Area ID
90.84 ha → Area (ha)
Ref. 1 → Reference Number

J.F. Sabourin and Associates Inc.
WATER RESOURCES AND ENVIRONMENTAL CONSULTANTS
52 Springbrook Drive
Ottawa, ON, K2S 1B9
(613) 836-3884
www.jfsa.com

DSEL
david schaeffer engineering ltd

PROJECT :

BCDC - Quantity Control Study

TITLE :

S-1 Sub-catchment and Fraser Clarke Sub-catchment Schematic

PROJECT NO.	1474-16
DRAWN:	MM
DATE:	Mar. 2021

Legend

- Channel Cross Sections

S-1 Sub-catchments and Fraser Sub-catchments

- S-1-A
- S-1-B
- S-1-D1
- S-1-D2
- S-1-D3
- S-1-D4
- S-1-D5
- S-1-D6
- S-1-D7
- S-1-D8
- S-1-FO-D1
- S-1-FO-D2
- S-1-FO-F-D
- S-1-Okeefe
- FRASER-DRN
- FRASER-D

Google Hybrid

File name:

20210304_S-1_Fraser_Schematic-Model4B.pdf

XS 3633 Cross Section at station 3633

S-1-A → Area ID
90.84 ha → Area (ha)
Ref. 1 → Reference Number

J.F. Sabourin and Associates Inc.
WATER RESOURCES AND ENVIRONMENTAL CONSULTANTS
52 Springbrook Drive
Ottawa, ON, K2S 1B9
(613) 836-3884
www.jfsa.com

DSEL
david schaeffer engineering ltd

PROJECT :

BCDC - Quantity Control Study

TITLE :

S-1 Sub-catchment and Fraser Clarke Sub-catchment Schematic

PROJECT NO.	1474-16
DRAWN:	MM
DATE:	Mar. 2021

J.F. Sabourin and Associates Inc.
52 Springbrook Drive,
Ottawa, ON K2S 1B9
T 613-836-3884   F 613-836-0332

jfsa.com

Ottawa. ON
Paris. ON
Gatineau. QC
Montréal. QC
Québec. QC

Attachment A

Model 1 – Jock River Floodplain Model

JFSA, 2005

SWMHYMO Input & Summary files

```
20    Metric units / ID numbers OFF
*#*****************************************************************************
*#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
*#*****************************************************************************
*#  Project Name: [Jock River]    Project Number: [411-02]
*#  Date         : 06-06-2003
*#  Modeller     : [JoF]
*#  Company      : JFSAinc.
*#  License #    :  2549237
*#*****************************************************************************
*# CALIBRATION OF SUMMER MODEL PARAMETERS
*# USING CONTINUOUS SIMULATIONS
*# Rainfall data from JFSA raingauge installed at site + other gauges by the City
*# Use data collected from May 1st to July 14, 2003
*
* Calibrated parameters for Summer 2003 data:  APII=50, APIK=0.85, CN=varies,
*                                              SK=0.01, InterEventTime=12,
*                                              GWResk=0.96, VHydCond=0.055
*
*# ---------------------------------------------------------------------------
*
*START                TZERO=[2003.0501],  METOUT=[2],  NSTORM=[1],  NRUN=[001]
*                     ["XAVG0315.STM"] average storm data a 15 minute time step
*                     The above rainf file is an average of the JFSA gauge data
*                     with the City of Ottawa rainfall data collected during
*                     the same period.
*%  2 yr, 24 hr SCS storm based on OTTAWA CDA IDF Curves
START                TZERO=[0.0],  METOUT=[2],  NSTORM=[1],  NRUN=[2]
*%                    ["C24SC002.stm"] <--storm filename, one per line for NSTORM time
*%-----------------|------------------------------------------------------------|
*%-----------------|------------------------------------------------------------|
READ STORM           STORM_FILENAME=["storm.001"]
*%-----------------|------------------------------------------------------------|
MODIFY STORM         ICASEms=[1],  NSHIFT=[96],
                     RedFACT=[1],
*%-----------------|------------------------------------------------------------|
COMPUTE API          APII=[50], APIK=[.85]/day
*%-----------------|------------------------------------------------------------|
*%-----------------|------------------------------------------------------------|
*#
*# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
*# of 1.32
*%-----------------|------------------------------------------------------------|
CONTINUOUS NASHYD    NHYD=["JR_HW"], DT=[30]min, AREA=[3680](ha),
                     DWF=[0](cms),  CN/C=[64], IA=[2.5](mm),
                     N=[3.0], TP=[7.13]hrs,
                     Continuous simulation parameters:
                     IaRECper=[4](hrs),
                     SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                     InterEventTime=[12](hrs)
                     Baseflow simulation parameters:
                     BaseFlowOption=[1] ,
                     InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                     VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|------------------------------------------------------------|
*#
*# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
*# of 1.32
*%-----------------|------------------------------------------------------------|
CONTINUOUS NASHYD    NHYD=["SW_13"], DT=[30]min, AREA=[971](ha),
                     DWF=[0](cms),  CN/C=[61], IA=[2.5](mm),
                     N=[3.0], TP=[3.76]hrs,
                     Continuous simulation parameters:
                     IaRECper=[4](hrs),
                     SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                     InterEventTime=[12](hrs)
```

```
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
*#
*# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
*# of 1.80
*%-----------------|-----------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["JR_GWM"], DT=[30]min, AREA=[3074](ha),
                    DWF=[0](cms),  CN/C=[55], IA=[2.5](mm),
                    N=[3], TP=[11.33]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["JR_ASH"], DT=[30]min, AREA=[1781](ha),
                    DWF=[0](cms),  CN/C=[72], IA=[2.5](mm),
                    N=[3.0], TP=[3.91]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["SW_11"], DT=[30]min, AREA=[500](ha),
                    DWF=[0](cms),  CN/C=[66], IA=[2.5](mm),
                    N=[3.0], TP=[1.24]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
*#
*# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
*# of 1.80
*%-----------------|-----------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["NN_CK"], DT=[30]min, AREA=[1917](ha),
                    DWF=[0](cms),  CN/C=[66], IA=[2.5](mm),
                    N=[3.0], TP=[5.29]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
*#
*# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
*# of 1.52
*%-----------------|-----------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["SW_10"], DT=[30]min, AREA=[5666](ha),
```

```
                    DWF=[0](cms),  CN/C=[72], IA=[2.5](mm),
                    N=[3.0], TP=[8.00]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-------------------------------------------------------------|
*#
*# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
*# of 1.75
*%-----------------|-------------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["KG_CK"], DT=[30]min, AREA=[8376](ha),
                    DWF=[0](cms),  CN/C=[66], IA=[2.5](mm),
                    N=[3.0], TP=[11.66]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-------------------------------------------------------------|
*#
*# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
*# of 1.68
*%-----------------|-------------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["SW_9"], DT=[30]min, AREA=[1132](ha),
                    DWF=[0](cms),  CN/C=[70], IA=[2.5](mm),
                    N=[3.0], TP=[2.51]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-------------------------------------------------------------|
*#
*# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
*# of 1.82
*%-----------------|-------------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["NC_CK"], DT=[30]min, AREA=[4464](ha),
                    DWF=[0](cms),  CN/C=[62], IA=[2.5](mm),
                    N=[3.0], TP=[11.32]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-------------------------------------------------------------|
*#
*# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
*# of 1.80
*%-----------------|-------------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["SW_8"], DT=[30]min, AREA=[131](ha),
                    DWF=[0](cms),  CN/C=[63], IA=[2.5](mm),
                    N=[3.0], TP=[0.90]hrs,
```

```
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
*#
*# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
*# of 1.65
*%-----------------|-----------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["HB_DR"], DT=[30]min, AREA=[3854](ha),
                    DWF=[0](cms),  CN/C=[66], IA=[2.5](mm),
                    N=[3.0], TP=[8.42]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
*#
*# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
*# of 1.82
*%-----------------|-----------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["SW_7"], DT=[30]min, AREA=[3197](ha),
                    DWF=[0](cms),  CN/C=[57], IA=[2.5](mm),
                    N=[3.0], TP=[6.65]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
*#
*# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
*# of 1.75
*%-----------------|-----------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["SW_6"], DT=[30]min, AREA=[165](ha),
                    DWF=[0](cms),  CN/C=[67], IA=[2.5](mm),
                    N=[3.0], TP=[4.18]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
*#
*# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
*# of 1.67
*%-----------------|-----------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["VG_DR"], DT=[30]min, AREA=[1332](ha),
                    DWF=[0](cms),  CN/C=[72], IA=[2.5](mm),
                    N=[3.0], TP=[5.95]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
```

```
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["SW_5"], DT=[30]min, AREA=[224](ha),
                    DWF=[0](cms),  CN/C=[77], IA=[2.5](mm),
                    N=[3.0], TP=[0.75]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
*#
*# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
*# of 1.20
*%-----------------|-----------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["FL_CK"], DT=[30]min, AREA=[4945](ha),
                    DWF=[0](cms),  CN/C=[74], IA=[2.5](mm),
                    N=[3.0], TP=[4.45]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["SW_5A2"], DT=[30]min, AREA=[20](ha),
                    DWF=[0](cms),  CN/C=[81], IA=[2.5](mm),
                    N=[3.0], TP=[0.62]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
*#
*# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
*# of 1.61
*%-----------------|-----------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["SW_5A1"], DT=[30]min, AREA=[1412](ha),
                    DWF=[0](cms),  CN/C=[75], IA=[2.5](mm),
                    N=[3.0], TP=[8.00]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["SW_4"], DT=[30]min, AREA=[585](ha),
                    DWF=[0](cms),  CN/C=[81], IA=[2.5](mm),
                    N=[3.0], TP=[1.75]hrs,
```

```
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|------------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["LM_CK"], DT=[30]min, AREA=[1021](ha),
                    DWF=[0](cms),  CN/C=[80], IA=[2.5](mm),
                    N=[3.0], TP=[2.46]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|------------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["SW_2"], DT=[30]min, AREA=[177](ha),
                    DWF=[0](cms),  CN/C=[77], IA=[2.5](mm),
                    N=[3.0], TP=[0.75]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|------------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["SM_DR"], DT=[30]min, AREA=[1122](ha),
                    DWF=[0](cms),  CN/C=[81], IA=[2.5](mm),
                    N=[3.0], TP=[3.25]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|------------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["MO_DR"], DT=[30]min, AREA=[2737](ha),
                    DWF=[0](cms),  CN/C=[76], IA=[2.5](mm),
                    N=[3.0], TP=[3.03]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|------------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["SW_1"], DT=[30]min, AREA=[3176](ha),
                    DWF=[0](cms),  CN/C=[78], IA=[2.5](mm),
                    N=[3.0], TP=[3.56]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
```

```
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
*#
*# Routing hydrographs
*#
*# Starting with the addition of Jock River Headwater and Subwatershed 13
*#
ADD HYD             NHYDsum=["S_N13"], NHYDs to add=["JR_HW"+"SW_13"]
*%-----------------|-----------------------------------------------------------|
*#
*# Sum of hydrographs from Node 13 routed to Node 13A
*# (Approximated cross-section - see cross-section 258)
*# Use n=0.04 for summer conditions and n=0.025 for spring conditions
*#
ROUTE CHANNEL       NHYDout=["N13A"] ,NHYDin=["S_N13"],
                    RDT=[30](min),
                    CHLGTH=[9074](m),  CHSLOPE=[0.0220](%),
                                       FPSLOPE=[0.0220](%),
                    SECNUM=[1.0],      NSEG=[1]
                    ( SEGROUGH, SEGDIST (m))=[0.04,15.5] NSEG times
                    ( DISTANCE (m), ELEVATION (m))=
                          [-40, 132.5]
                          [-30, 132]
                          [-25, 131.5]
                          [-13, 130]
                          [-8, 127.00]
                          [-7, 126.50]
                          [-6, 126]
                          [-5.5, 125.50]
                          [0, 123.75]
                          [4.5, 125.50]
                          [6, 126]
                          [7.5, 126.5]
                          [9, 127]
                          [10, 127.5]
                          [11.5, 128.0]
                          [15.5, 129.5]
*%-----------------|-----------------------------------------------------------|
*#
*# Addition of Subwatershed Jock River at Goodwood Marsh to Node 13A
*#
ADD HYD             NHYDsum=["SN13A"], NHYDs to add=["N13A"+"JR_GWM"]
*%-----------------|-----------------------------------------------------------|
*#
*# Insertion of a reservoir to simulate the effects of the Goodwood Marsh
*#
ROUTE RESERVOIR     NHYDout=["RES_GM"] ,NHYDin=["SN13A"],
                    RDT=[30](min),
                          TABLE of ( OUTFLOW-STORAGE ) values
                                      (cms) - (ha-m)
                                    [   0.0 ,  0.0 ]
                                    [1.991, 2.144    ]
                                    [2.693, 39.826   ]
                                    [3.509, 81.697   ]
                                    [4.578, 318.774  ]
                                    [5.647, 594.947  ]
                                    [7.109, 910.219  ]
                                    [8.616, 1264.589  ]
                                    [10.371, 1658.057  ]
                                    [12.402, 2090.622 ]
                                    [22.056, 3462.487 ]
                                    [   -1  ,  -1  ]  (max twenty pts)
                          NHYDovf=["      "] ,
*%-----------------|-----------------------------------------------------------|
*#
```

```
SAVE HYD            NHYD=["RES_GM"],  # OF PCYCLES=[-1],  ICASEsh=[-1]
                    HYD_FILENAME=["H_RESGM"]
                    HYD_COMMENT=["Outflow from Res GM"]
*%-----------------|-----------------------------------------------------------|
*# Output of Reservoir Goodwood Marsh routed from Node 13A to Node 12
*# (Approximated cross-section - see cross-section 258)
*# Use n=0.04 for summer conditions and n=0.025 for spring conditions
ROUTE CHANNEL       NHYDout=["N12"] ,NHYDin=["RES_GM"] ,
                    RDT=[30](min),
                    CHLGTH=[5926](m),  CHSLOPE=[0.0759](%),
                                        FPSLOPE=[0.0759](%),
                    SECNUM=[1.0],       NSEG=[1]
                    ( SEGROUGH, SEGDIST (m))=[0.04,15.5] NSEG times
                    ( DISTANCE (m), ELEVATION (m))=
                          [-40, 132.5]
                          [-30, 132]
                          [-25, 131.5]
                          [-13, 130]
                          [-8, 127.00]
                          [-7, 126.50]
                          [-6, 126]
                          [-5.5, 125.50]
                          [0, 123.75]
                          [4.5, 125.50]
                          [6, 126]
                          [7.5, 126.5]
                          [9, 127]
                          [10, 127.5]
                          [11.5, 128.00]
                          [15.5, 129.5]
*%-----------------|-----------------------------------------------------------|
*#
*# Addition of Subwatershed Jock River at Ashton to Node 12
*#
ADD HYD             NHYDsum=["S_N12"], NHYDs to add=["N12"+"JR_ASH"]
SAVE HYD            NHYD=["S_N12"],  # OF PCYCLES=[-1],  ICASEsh=[-1]
                    HYD_FILENAME=["H_SN12"]
                    HYD_COMMENT=["flow at S_N12 near Ashton"]
*%-----------------|-----------------------------------------------------------|
*#
*# Sum of hydrographs from Node 12 routed to Node 11
*# (Approximated cross-section - see cross-section 258)
*# Use n=0.04 for summer conditions and n=0.025 for spring conditions
ROUTE CHANNEL       NHYDout=["N11"] ,NHYDin=["S_N12"] ,
                    RDT=[30](min),
                    CHLGTH=[972](m),  CHSLOPE=[0.0514](%),
                                        FPSLOPE=[0.0514](%),
                    SECNUM=[1.0],       NSEG=[1]
                    ( SEGROUGH, SEGDIST (m))=[0.04,15.5] NSEG times
                    ( DISTANCE (m), ELEVATION (m))=
                          [-40, 132.5]
                          [-30, 132]
                          [-25, 131.5]
                          [-13, 130]
                          [-8, 127.00]
                          [-7, 126.50]
                          [-6, 126]
                          [-5.5, 125.50]
                          [0, 123.75]
                          [4.5, 125.50]
                          [6, 126]
                          [7.5, 126.5]
                          [9, 127]
                          [10, 127.5]
                          [11.5, 128.00]
                          [15.5, 129.5]
```

```
*%-----------------|------------------------------------------------------------|
*#
*# Sum of hydrographs from Node 12 routed to Node 11 with Dummy section 248
*#
ROUTE CHANNEL       NHYDout=["Dum11"] ,NHYDin=["S_N12"] ,
                    RDT=[30](min),
                    CHLGTH=[972](m),  CHSLOPE=[0.054](%),
                                        FPSLOPE=[0.054](%),
                    SECNUM=[1.0],       NSEG=[1]
                    ( SEGROUGH, SEGDIST (m))=[0.04,15.5] NSEG times
                    ( DISTANCE (m), ELEVATION (m))=
                          [-40, 132.5]
                          [-30, 132]
                          [-25, 131.5]
                          [-13, 130]
                          [-8, 127.00]
                          [-7, 126.50]
                          [-6, 126]
                          [-5.5, 125.50]
                          [0, 123.75]
                          [4.5, 125.50]
                          [6, 126]
                          [7.5, 126.5]
                          [9, 127]
                          [10, 127.5]
                          [11.5, 128.00]
                          [15.5, 129.5]
*%-----------------|------------------------------------------------------------|
*#
*# Addition of Subwatershed 11 and No Name Creek to Node 11
*#
ADD HYD             NHYDsum=["S_N11"], NHYDs to add=["Dum11"+"SW_11"+"NN_CK"]
*%-----------------|------------------------------------------------------------|
*#
*# Sum of hydrographs from Node 11 routed to Node 10
*# Section 1
*#
ROUTE CHANNEL       NHYDout=["N10"] ,NHYDin=["S_N11"] ,
                    RDT=[30](min),
                    CHLGTH=[14028](m),  CHSLOPE=[0.1568](%),
                                        FPSLOPE=[0.1568](%),
                    SECNUM=[1.0],       NSEG=[5]
                    ( SEGROUGH, SEGDIST (m))=
                     [0.04,-52.82
                      0.1,-6.47
                      -0.05,6.47
                      0.1,45.36
                      0.04,423.88] NSEG times
                   ( DISTANCE (m), ELEVATION (m))=
                          [-226.24 ,112.50]
                          [-167.50 ,111.50]
                          [-106.81 ,111.00]
                          [-92.37 ,110.00]
                          [-52.82 ,109.00]
                          [-24.90, 109.00]
                          [-17.02, 108.50]
                          [-6.47, 108.00]
                          [6.47, 108.00]
                          [15.67, 108.50]
                          [18.95, 109.00]
                          [45.36, 109.50]
                          [120.79, 110.00]
                          [145.72, 111.00]
                          [181.56, 111.50]
                          [423.88, 112.50]
*%-----------------|------------------------------------------------------------|
```

```
*#
*# Addition of Subwatershed 10 to Node 10
*#
ADD HYD             NHYDsum=["S_N10"], NHYDs to add=["N10"+"SW_10"]
*%-----------------|-----------------------------------------------------------|
SAVE HYD            NHYD=["S_N10"],  # OF PCYCLES=[-1],  ICASEsh=[-1]
                    HYD_FILENAME=["H_SN10"]
                    HYD_COMMENT=["flow at S_N10: N10 + SW_10"]
*%-----------------|-----------------------------------------------------------|
*# Addition of Kings Creek to S_N10
*#
ADD HYD             NHYDsum=["S_N10A"], NHYDs to add=["S_N10"+"KG_CK"]
*%-----------------|-----------------------------------------------------------|
*#
*# Sum of hydrographs from Node 10 routed to Node 9
*# Section 2
*#
ROUTE CHANNEL       NHYDout=["N9"] ,NHYDin=["S_N10A"] ,
                    RDT=[30](min),
                    CHLGTH=[3982](m),  CHSLOPE=[0.0753](%),
                                        FPSLOPE=[0.0753](%),
                    SECNUM=[1.0],       NSEG=[4]
                    ( SEGROUGH, SEGDIST (m))=
                      [0.04,-30.27
                       0.05,-18.42
                      -0.05,18.42
                      0.04,131.58] NSEG times
                    ( DISTANCE (m), ELEVATION (m))=
                          [-446.74, 106.00]
                          [-415.68, 105.50]
                          [-285.40, 105.00]
                          [-173.77, 104.50]
                          [-144.95, 104.00]
                          [-111.18, 103.50]
                          [-94.06, 103.00]
                          [-71.02, 102.50]
                          [-30.27, 102.00]
                          [-19.33, 100.00]
                          [-18.42, 99.50]
                          [18.42, 99.50]
                          [20.77, 100.00]
                          [27.93, 101.00]
                          [52.29, 101.00]
                          [68.80, 101.50]
                          [79.66, 103.00]
                          [91.50, 103.50]
                          [131.58, 104.00]
*%-----------------|-----------------------------------------------------------|
*#
*# Addition of Subwatershed 9 and Nichols Creek to Node 9
*#
ADD HYD             NHYDsum=["S_N9"], NHYDs to add=["N9"+"SW_9"+"NC_CK"]
*%-----------------|-----------------------------------------------------------|
*#
*# Sum of hydrographs from Node 9 routed to Node 8
*# Section 3
*#
ROUTE CHANNEL       NHYDout=["N8"] ,NHYDin=["S_N9"] ,
                    RDT=[30](min),
                    CHLGTH=[2269](m),  CHSLOPE=[0.0882](%),
                                        FPSLOPE=[0.0882](%),
                    SECNUM=[1.0],       NSEG=[3]
                    ( SEGROUGH, SEGDIST (m))=
                      [0.1,-17.99
                      -0.045,17.31
                      0.1,456.58] NSEG times
```

```
                    ( DISTANCE (m), ELEVATION (m))=
                          [-201.19,100.50]
                          [-135.21, 100.00]
                          [-94.83, 99.50]
                          [-67.05, 99.00]
                          [-17.99, 98.50]
                          [-16.02, 98.00]
                          [-13.95, 97.50]
                          [13.95, 97.50]
                          [15.64, 98.00]
                          [17.31, 98.50]
                          [162.02, 98.50]
                          [172.89 ,99.00]
                          [314.38, 99.00]
                          [343.78, 99.50]
                          [365.67, 100.00]
                          [376.68, 100.00 ]
                          [393.11, 99.50]
                          [404.97, 99.50]
                          [431.70, 100.00]
                          [456.58, 100.50 ]
*%-----------------|------------------------------------------------------------|
*#
*# Addition of Subwatershed 8 and Hobb's Drain to Node 8
*#
ADD HYD             NHYDsum=["S_N8"], NHYDs to add=["N8"+"SW_8"+"HB_DR"]
*%-----------------|------------------------------------------------------------|
*#
*# Sum of hydrographs from Node 8 routed to Node 7
*# Section 4
*#
ROUTE CHANNEL       NHYDout=["N7"] ,NHYDin=["S_N8"],
                    RDT=[30](min),
                    CHLGTH=[3750](m),  CHSLOPE=[0.0533](%),
                                        FPSLOPE=[0.0533](%),
                    SECNUM=[1.0],       NSEG=[3]
                    ( SEGROUGH, SEGDIST (m))=
                      [0.12,-18.11
                      -0.07,17.22
                      0.12,590.05] NSEG times
                    ( DISTANCE (m), ELEVATION (m))=
                          [-433.21, 102.00]
                          [-425.34, 101.50]
                          [-377.56, 101.50]
                          [-366.23, 101.00]
                          [-202.60, 100.50]
                          [-96.25, 99.50]
                          [-68.36 99.00]
                          [-18.11, 98.50]
                          [-13.81, 97.50]
                          [13.81, 97.50]
                          [17.22, 98.50]
                          [161.95, 98.50]
                          [173.11, 99.00]
                          [314.05, 99.00]
                          [365.52, 100.00]
                          [404.70, 99.50]
                          [476.74, 100.50]
                          [502.31, 101.00]
                          [584.69, 101.00]
                          [585.79, 101.00]
                          [590.05, 102.00]
*%-----------------|------------------------------------------------------------|
*#
*# Addition of Subwatershed 7 to Node 7
*#
```

```
ADD HYD              NHYDsum=["S_N7"], NHYDs to add=["N7"+"SW_7"]
*%-----------------|-------------------------------------------------------------|
SAVE HYD             NHYD=["S_N7"],  # OF PCYCLES=[-1],  ICASEsh=[-1]
                     HYD_FILENAME=["H_SN7"]
                     HYD_COMMENT=["flow at S_N7: N7 + SW_7"]
*%-----------------|-------------------------------------------------------------|
*# Insertion of a reservoir to simulate the effects of the Richmond Fen.
*# Storage area and volumes were estimated from available topo maps.
*# Release rate from fen was assumed to be controlled by the downstream
*# river cross-section for summer conditions.  It is was assumed that for up to
*# 0.75 m of water, the main channel of the river provided the storage.  Above
*# this depth, the wetland starts to signigicantly store water.
*#
ROUTE RESERVOIR      NHYDout=["RES_RF"] ,NHYDin=["S_N7"] ,
                     RDT=[30](min),
                           TABLE of ( OUTFLOW-STORAGE ) values
                                       (cms) - (ha-m)
                           TABLE of ( OUTFLOW-STORAGE ) values
                                       (cms) - (ha-m)
                                     [   0.0 ,     0.0 ]
                                     [0.9051,    2.40]
                                     [2.907,     4.13]
                                     [9.744,     9.18]
                                     [20.304,   14.96]
                                     [34.167,  310.21]
                                     [74.993,  605.46]
                                     [104.876, 900.71]
                                     [140.56, 2892.00]
                                     [225.00, 3615.63]
                                     [   -1  ,  -1  ]  (max twenty pts)
                           NHYDovf=["      "] ,
*%-----------------|-------------------------------------------------------------|
SAVE HYD             NHYD=["RES_RF"],  # OF PCYCLES=[-1],  ICASEsh=[-1]
                     HYD_FILENAME=["H_ResRF"]
                     HYD_COMMENT=["outflow of Richmond Fen"]
*%-----------------|-------------------------------------------------------------|
*#
*# Sum of hydrographs from Node 7 routed to Node 6
*# Section 5
*#
ROUTE CHANNEL        NHYDout=["N6"] ,NHYDin=["RES_RF"] ,
                     RDT=[30](min),
                     CHLGTH=[3056](m),  CHSLOPE=[0.0818](%),
                                         FPSLOPE=[0.0818](%),
                     SECNUM=[1.0],       NSEG=[5]
                     ( SEGROUGH, SEGDIST (m))=
                       [0.025,-70.8
                       0.1,-23.9
                       -0.05,23.9
                       0.06,39.8
                       0.05,96.3] NSEG times
                     ( DISTANCE (m), ELEVATION (m))=
                                      [-100.8, 97.00]
                                      [-70.8, 96.50]
                                      [-52.0, 96.00]
                                      [-35.1, 95.50]
                                      [-30.6, 95.00]
                                      [-23.9, 94.54]
                                      [23.9, 94.54]
                                      [39.8, 95.00]
                                      [50.4, 95.50]
                                      [93.5, 96.00]
                                      [94.9, 96.50]
                                      [96.3, 97.00]
*%-----------------|-------------------------------------------------------------|
*#
```

```
*# Addition of Subwatershed 6 and Van Gaal Drain to Node 6
*#
ADD HYD              NHYDsum=["S_N6"], NHYDs to add=["N6"+"SW_6"+"VG_DR"]
*%-----------------|------------------------------------------------------------|
*#
*# Sum of hydrographs from Node 6 routed to Node 5
*# Section 6
*#
ROUTE CHANNEL        NHYDout=["N5"] ,NHYDin=["S_N6"] ,
                     RDT=[30](min),
                     CHLGTH=[1852](m),  CHSLOPE=[0.0540](%),
                                         FPSLOPE=[0.0540](%),
                     SECNUM=[1.0],       NSEG=[3]
                     ( SEGROUGH, SEGDIST (m))=
                       [0.035,-131.59
                       -0.045,48.96
                       0.1,239.04] NSEG times
                     ( DISTANCE (m), ELEVATION (m))=
                                      [-686.30, 94.50]
                                      [-675.70, 94.00]
                                      [-492.52, 93.00]
                                      [-467.28, 94.00]
                                      [-131.59, 94.00]
                                      [-92.79, 92.50]
                                      [-18.06, 91.00]
                                      [18.06, 91.00]
                                      [43.47, 92.50]
                                      [48.96, 94.00]
                                      [177.43, 94.00]
                                      [239.04,94.50]
*%-----------------|------------------------------------------------------------|
*#
*# Addition of Subwatershed 5 and Flowing Creek to Node 5
*#
ADD HYD              NHYDsum=["S_N5"], NHYDs to add=["N5"+"SW_5"+"FL_CK"]
*%-----------------|------------------------------------------------------------|
*#
*# Sum of hydrographs from Node 5 routed to Node 5A
*# Section 7
*#
ROUTE CHANNEL        NHYDout=["N5A"] ,NHYDin=["S_N5"] ,
                     RDT=[30](min),
                     CHLGTH=[556](m),  CHSLOPE=[0.0900](%),
                                         FPSLOPE=[0.0900](%),
                     SECNUM=[1.0],       NSEG=[4]
                     ( SEGROUGH, SEGDIST (m))=
                       [0.04,-41.5
                       0.1,-14.0
                       -0.045,14.0
                       0.1,41.1] NSEG times
                     ( DISTANCE (m), ELEVATION (m))=
                                      [-275.8, 93.00]
                                      [-248.6, 92.50]
                                      [-237.0, 92.00]
                                      [-219.3, 91.50]
                                      [-202.1, 91.50]
                                      [-186.0, 92.00]
                                      [-129.2, 92.00]
                                      [-117.6, 91.50]
                                      [-100.6, 91.00]
                                      [-41.5, 91.00]
                                      [-20.0, 91.00]
                                      [-14.0, 90.54]
                                      [14.0, 90.54]
                                      [15.3, 91.00]
                                      [17.3, 91.50]
```

```
                                     [38.4, 92.00]
                                     [39.8, 92.50]
                                     [41.1, 93.00]
*%-----------------|------------------------------------------------------------|
*#
*# Addition of Subwatershed 5A1 and Subwatershed 5A2 to Node 5A
*#
ADD HYD                    NHYDsum=["S_N5A"], NHYDs to add=["N5A"+"SW_5A2"+"SW_5A1"]
*%-----------------|------------------------------------------------------------|
*#
*# Sum of hydrographs from Node 5A routed to Node 4
*# Section 8
*#
ROUTE CHANNEL              NHYDout=["N4"] ,NHYDin=["S_N5A"] ,
                           RDT=[30](min),
                           CHLGTH=[4630](m),  CHSLOPE=[0.0432](%),
                                               FPSLOPE=[0.0432](%),
                           SECNUM=[1.0],       NSEG=[3]
                           ( SEGROUGH, SEGDIST (m))=
                             [0.05,-28.2
                             -0.035,28.2
                             0.05,173.1] NSEG times
                           ( DISTANCE (m), ELEVATION (m))=
                                            [-38.9, 92.00]
                                            [-35.8, 91.50]
                                            [-33.3, 91.00]
                                            [-28.2, 90.50]
                                            [-15.0, 87.48]
                                            [-5.0, 88.34]
                                            [5.0, 86.20]
                                            [15.0, 88.55]
                                            [28.2, 90.50]
                                            [29.7, 91.00]
                                            [46.5, 91.00]
                                            [127.8, 91.00]
                                            [148.7, 91.50]
                                            [173.1, 92.00]
*%-----------------|------------------------------------------------------------|
*#
*# Addition of Subwatershed 4 and Leamy Creek to Node 4
*#
ADD HYD                    NHYDsum=["S_N4"], NHYDs to add=["N4"+"SW_4"+"LM_CK"]
SAVE HYD                   NHYD=["S_N4"],  # OF PCYCLES=[-1],  ICASEsh=[1]
                           HYD_COMMENT=["flow at S_N4"]
*%-----------------|------------------------------------------------------------|
*#
*# Sum of hydrographs from Node 4 routed to Node 2
*# Section 9
*#
ROUTE CHANNEL              NHYDout=["N2"] ,NHYDin=["S_N4"] ,
                           RDT=[30](min),
                           CHLGTH=[1667](m),  CHSLOPE=[0.0600](%),
                                               FPSLOPE=[0.0600](%),
                           SECNUM=[1.0],       NSEG=[4]
                           ( SEGROUGH, SEGDIST (m))=
                             [0.1,-28.0
                             -0.04,28.4
                             0.06,31.7
                             0.04,80.2] NSEG times
                           ( DISTANCE (m), ELEVATION (m))=
                                  [-36.3, 92.00]
                                  [-32.6, 91.50]
                                  [-30.2, 91.00]
                                  [-28.0, 90.45]
                                  [-15.0, 87.48]
                                  [-5.0, 88.34]
```

```
                             [5.0, 86.20]
                             [15.0, 88.55]
                             [28.0, 90.45]
                             [28.4, 90.50]
                             [30.4, 91.00]
                             [31.7, 91.50]
                             [80.2, 92.00]
*%-----------------|-----------------------------------------------------------|
*#
*# Addition of Subwatershed 2 with Monohan Drain and Smith Drain to Node 2
*#
ADD HYD                   NHYDsum=["S_N2"], NHYDs to add=["N2"+"SW_2"+"SM_DR"+"MO_DR"]
*%-----------------|-----------------------------------------------------------|
SAVE HYD                  NHYD=["S_N2"],  # OF PCYCLES=[-1],  ICASEsh=[-1]
                          HYD_FILENAME=["H_SN2"]
                          HYD_COMMENT=["flow at S_N2 Jock River Gauge at Moodie Dr."]
*%-----------------|-----------------------------------------------------------|
*#
*# Sum of hydrographs from Node 2 routed to Node 1
*# Section 10
*#
ROUTE CHANNEL             NHYDout=["N1"] ,NHYDin=["S_N2"] ,
                          RDT=[30](min),
                          CHLGTH=[10046](m),  CHSLOPE=[0.0498](%),
                                              FPSLOPE=[0.0498](%),
                          SECNUM=[1.0],       NSEG=[5]
                          ( SEGROUGH, SEGDIST (m))=
                            [0.04,-27.6
                            0.06,-15.0
                            -0.045,15.0
                            0.06,25.4
                            0.04,122.6] NSEG times
                          ( DISTANCE (m), ELEVATION (m))=
                                               [-87.0, 91.50]
                                               [-32.4, 91.00]
                                               [-27.6, 90.50]
                                               [-25.0, 90.00]
                                               [-22.9, 89.57]
                                               [-15.0, 86.20]
                                               [-5.0, 84.83]
                                               [5.0, 84.83]
                                               [15.0, 88.11]
                                               [22.9, 89.57]
                                               [25.4, 90.00]
                                               [27.9, 90.50]
                                               [38.0, 91.00]
                                               [112.5, 91.00]
                                               [114.3, 90.50]
                                               [115.1, 90.26]
                                               [116.3, 90.50]
                                               [119.0, 91.00]
                                               [121.0, 91.50]
                                               [122.6, 92.00]
*%-----------------|-----------------------------------------------------------|
*#
*# Addition of Subwatershed 1 to Node 1
*#
ADD HYD                   NHYDsum=["N1"], NHYDs to add=["N1"+"SW_1"]
SAVE HYD                  NHYD=["N1"],  # OF PCYCLES=[-1],  ICASEsh=[1]
                          HYD_COMMENT=["total outflow of Jock River"]
*%-----------------|-----------------------------------------------------------|
*#############################################################################
*%  5 yr, 24 hr SCS storm based on OTTAWA CDA IDF Curves
START                     TZERO=[0.0],  METOUT=[2],  NSTORM=[1],  NRUN=[5]
*%                         ["C24SC005.stm"] <--storm filename, one per line for NSTORM time
*%-----------------|-----------------------------------------------------------|
```

```
*%  10 yr, 24 hr SCS storm based on OTTAWA CDA IDF Curves
START               TZERO=[0.0],  METOUT=[2],  NSTORM=[1],  NRUN=[10]
*%                   ["C24SC010.stm"] <--storm filename, one per line for NSTORM time
*%-----------------|-----------------------------------------------------------|
*%  25 yr, 24 hr SCS storm based on OTTAWA CDA IDF Curves
START               TZERO=[0.0],  METOUT=[2],  NSTORM=[1],  NRUN=[25]
*%                   ["C24SC025.stm"] <--storm filename, one per line for NSTORM time
*%-----------------|-----------------------------------------------------------|
*%  50 yr, 24 hr SCS storm based on OTTAWA CDA IDF Curves
START               TZERO=[0.0],  METOUT=[2],  NSTORM=[1],  NRUN=[50]
*%                   ["C24SC050.stm"] <--storm filename, one per line for NSTORM time
*%-----------------|-----------------------------------------------------------|
*%  100 yr, 24 hr SCS storm based on OTTAWA CDA IDF Curves
START               TZERO=[0.0],  METOUT=[2],  NSTORM=[1],  NRUN=[100]
*%                   ["C24SC100.stm"] <--storm filename, one per line for NSTORM time
FINISH
```

```
 ==================================================================================

 SSSSS   W   W   M   M   H   H   Y   Y   M   M    OOO         222     000    11   5555   =========
 S       W W W   MM MM   H   H    Y Y    MM MM   O   O          2    0   0   11   5
 SSSSS   W W W   M M M   HHHHH     Y     M M M   O   O          2    0   0   11   5      Ver 5.500
     S    W W    M   M   H   H     Y     M   M   O   O        222    0   0   11   555    FEB  2015
 SSSSS    W W    M   M   H   H     Y     M   M    OOO         2      0   0   11     5    =========
                                                              2      0   0   11     5    # 2549237
       StormWater Management HYdrologic Model                  222     000    11   555    =========

 **********************************************************************************
 **************************************  SWMHYMO Ver 5.500  ************************
 ******************  A single event and continuous hydrologic simulation model  ******************
 ******************     based on the principles of HYMO and its successors      ******************
 ******************                OTTHYMO-83 and OTTHYMO-89.                   ******************
 **********************************************************************************
 ****************** Distributed by:  J.F. Sabourin and Associates Inc.          ******************
 ******************                  Ottawa,  Ontario: (613) 836-3884           ******************
 ******************                  Gatineau, Quebec: (819) 243-6858           ******************
 ******************                  E-Mail: swmhymo@jfsa.Com                   ******************
 **********************************************************************************

 ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
 ++++++++++++++++++ Licensed user: JFSAinc.                                     ++++++++++++++++++
 ++++++++++++++++++                Ottawa               SERIAL#:2549237          ++++++++++++++++++
 ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

 **********************************************************************************
 ******************            ++++++ PROGRAM ARRAY DIMENSIONS ++++++          ******************
 ******************            Maximum value for ID numbers  :     11          ******************
 ******************            Max. number of rainfall points: 105408          ******************
 ******************            Max. number of flow points    : 105408          ******************
 **********************************************************************************


 ********************************   S U M M A R Y   O U T P U T   ********************************
 **********************************************************************************
 *                 RUN DATE: 2021-02-22     TIME: 15:43:08     RUN COUNTER: 001996                *
 **********************************************************************************
 * Input   file: T:\PROJ\1474-16\Design\20201026-QuantityControlAnalysis\SWMHYMO\SMR-Model\summer.*
 *               DAT                                                                              *
 * Output  file: T:\PROJ\1474-16\Design\20201026-QuantityControlAnalysis\SWMHYMO\SMR-Model\summer.*
 *               out                                                                              *
 * Summary file: T:\PROJ\1474-16\Design\20201026-QuantityControlAnalysis\SWMHYMO\SMR-Model\summer.*
 *               sum                                                                              *
 * User comments:                                                                                 *
 * 1:_____________________________________________________________________________________________*
 * 2:_____________________________________________________________________________________________*
 * 3:_____________________________________________________________________________________________*
 **********************************************************************************


#*************************************************************************
#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
#*************************************************************************
#  Project Name: [Jock River]    Project Number: [411-02]
#  Date        : 06-06-2003
#  Modeller    : [JoF]
#  Company     : JFSAinc.
#  License #   :  2549237
#*************************************************************************
# CALIBRATION OF SUMMER MODEL PARAMETERS
# USING CONTINUOUS SIMULATIONS
# Rainfall data from JFSA raingauge installed at site + other gauges by the City
# Use data collected from May 1st to July 14, 2003
# ----------------------------------------------------------------------------
  ** END OF RUN :    1

**********************************************************************************





 RUN#:COMMAND#
R0002:C00001-----------------------------------------------------------------------------------
     START
      [TZERO =    .00 hrs on        0]
      [METOUT=   2    (1=imperial, 2=metric output)]
      [NSTORM=   1 ]
      [NRUN  = 0002 ]
#*************************************************************************
#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
#*************************************************************************
#  Project Name: [Jock River]    Project Number: [411-02]
#  Date        : 06-06-2003
#  Modeller    : [JoF]
#  Company     : JFSAinc.
#  License #   :  2549237
#*************************************************************************
# CALIBRATION OF SUMMER MODEL PARAMETERS
# USING CONTINUOUS SIMULATIONS
# Rainfall data from JFSA raingauge installed at site + other gauges by the City
# Use data collected from May 1st to July 14, 2003
# ----------------------------------------------------------------------------
R0002:C00002-----------------------------------------------------------------------------------
     READ STORM
      Filename = storm.001
      Comment  = Pluie SCS de 24 hres 1:2 ans pour Ottawa CDA
      [SDT=10.00:SDUR=  24.00:PTOT=  45.51]
R0002:C00003-----------------------------------------------------------------------------------
     MODIFY STORM
      [RFACT=  1.00:TSHIFT= 960.00 min]
      [SDT=10.00:SDUR=  40.00:PTOT=  45.51]
R0002:C00004-----------------------------------------------------------------------------------
     COMPUTE API
      [APIini= 50.00: APIkdy= .8500: APIkdt= .9989]
      {APImax= 80.12: APIavg= 56.74: APImin= 44.87}
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.32
R0002:C00005-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    30.0 01:JR_HW       3680.00    6.065 No_date   37:00   11.44 .251     .000
      [CN= 64.0: N= 3.00: Tp= 7.13]
      [IaREC= 4.00: SMIN= 57.05: SMAX=380.32: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.32
R0002:C00006-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    30.0 01:SW_13        971.00    2.154 No_date   32:30   10.72 .236     .000
      [CN= 61.0: N= 3.00: Tp= 3.76]
      [IaREC= 4.00: SMIN= 64.50: SMAX=430.01: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.80
R0002:C00007-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    30.0 01:JR_GWM      3074.00    3.115 No_date   39:30    9.41 .207     .000
      [CN= 55.0: N= 3.00: Tp=11.33]
      [IaREC= 4.00: SMIN= 83.24: SMAX=554.96: SK= .010]
      [InterEventTime=  12.00]
R0002:C00008-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    30.0 01:JR_ASH      1781.00    5.417 No_date   32:30   13.91 .306     .000
      [CN= 72.0: N= 3.00: Tp= 3.91]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
R0002:C00009-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    30.0 01:SW_11        500.00    2.663 No_date   29:00   11.95 .263     .000
      [CN= 66.0: N= 3.00: Tp= 1.24]
      [IaREC= 4.00: SMIN= 52.62: SMAX=350.79: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.80
R0002:C00010-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    30.0 01:NN_CK       1917.00    3.966 No_date   34:30   11.95 .263     .000
      [CN= 66.0: N= 3.00: Tp= 5.29]
      [IaREC= 4.00: SMIN= 52.62: SMAX=350.79: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.52
R0002:C00011-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    30.0 01:SW_10       5666.00   10.936 No_date   38:00   13.91 .306     .000
      [CN= 72.0: N= 3.00: Tp= 8.00]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.75
R0002:C00012-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    30.0 01:KG_CK       8376.00   10.656 No_date   39:30   11.95 .263     .000
      [CN= 66.0: N= 3.00: Tp=11.66]
      [IaREC= 4.00: SMIN= 52.62: SMAX=350.79: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.68
R0002:C00013-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    30.0 01:SW_9        1132.00    4.365 No_date   30:30   13.32 .293     .000
      [CN= 70.0: N= 3.00: Tp= 2.51]
      [IaREC= 4.00: SMIN= 43.07: SMAX=287.10: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.82
R0002:C00014-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    30.0 01:NC_CK       4464.00    5.312 No_date   39:30   10.96 .241     .000
      [CN= 62.0: N= 3.00: Tp=11.32]
      [IaREC= 4.00: SMIN= 61.90: SMAX=412.66: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.80
R0002:C00015-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
  * CONTINUOUS NASHYD    30.0 01:SW_8         131.00     .770 No_date   28:30   11.20 .246     .000
      [CN= 63.0: N= 3.00: Tp=  .90]
      [IaREC= 4.00: SMIN= 59.42: SMAX=396.11: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.65
R0002:C00016-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    30.0 01:HB_DR       3854.00    6.083 No_date   38:30   11.95 .263     .000
      [CN= 66.0: N= 3.00: Tp= 8.42]
      [IaREC= 4.00: SMIN= 52.62: SMAX=350.79: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.82
R0002:C00017-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    30.0 01:SW_7        3197.00    4.557 No_date   36:30    9.83 .216     .000
      [CN= 57.0: N= 3.00: Tp= 6.65]
      [IaREC= 4.00: SMIN= 76.32: SMAX=508.81: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.75
R0002:C00018-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    30.0 01:SW_6         165.00     .407 No_date   33:00   12.21 .268     .000
      [CN= 67.0: N= 3.00: Tp= 4.18]
      [IaREC= 4.00: SMIN= 50.55: SMAX=336.97: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.67
R0002:C00019-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    30.0 01:VG_DR       1332.00    3.083 No_date   35:00   13.91 .306     .000
      [CN= 72.0: N= 3.00: Tp= 5.95]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
R0002:C00020-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
  * CONTINUOUS NASHYD    30.0 01:SW_5         224.00    2.527 No_date   28:30   15.88 .349     .000
      [CN= 77.0: N= 3.00: Tp=  .75]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.20
R0002:C00021-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    30.0 01:FL_CK       4945.00   14.579 No_date   33:00   14.54 .319     .000
      [CN= 74.0: N= 3.00: Tp= 4.45]
      [IaREC= 4.00: SMIN= 36.67: SMAX=244.49: SK= .010]
      [InterEventTime=  12.00]
R0002:C00022-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
  * CONTINUOUS NASHYD    30.0 01:SW_5A2        20.00     .287 No_date   28:30   17.76 .390     .000
      [CN= 81.0: N= 3.00: Tp=  .62]
      [IaREC= 4.00: SMIN= 25.21: SMAX=168.09: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.61
R0002:C00023-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    30.0 01:SW_5A1      1412.00    3.007 No_date   38:00   15.19 .334     .000
      [CN= 75.0: N= 3.00: Tp= 8.00]
      [IaREC= 4.00: SMIN= 33.81: SMAX=225.43: SK= .010]
      [InterEventTime=  12.00]
R0002:C00024-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    30.0 01:SW_4         585.00    4.232 No_date   29:30   17.76 .390     .000
      [CN= 81.0: N= 3.00: Tp= 1.75]
      [IaREC= 4.00: SMIN= 25.21: SMAX=168.09: SK= .010]
      [InterEventTime=  12.00]
R0002:C00025-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    30.0 01:LM_CK       1021.00    5.667 No_date   30:30   17.36 .382     .000
      [CN= 80.0: N= 3.00: Tp= 2.46]
      [IaREC= 4.00: SMIN= 26.32: SMAX=175.50: SK= .010]
      [InterEventTime=  12.00]
R0002:C00026-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
  * CONTINUOUS NASHYD    30.0 01:SW_2         177.00    1.996 No_date   28:30   15.88 .349     .000
      [CN= 77.0: N= 3.00: Tp=  .75]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0002:C00027-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    30.0 01:SM_DR       1122.00    5.257 No_date   31:30   17.76 .390     .000
      [CN= 81.0: N= 3.00: Tp= 3.25]
      [IaREC= 4.00: SMIN= 25.21: SMAX=168.09: SK= .010]
      [InterEventTime=  12.00]
R0002:C00028-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    30.0 01:MO_DR       2737.00   11.338 No_date   31:30   15.53 .341     .000
      [CN= 76.0: N= 3.00: Tp= 3.03]
      [IaREC= 4.00: SMIN= 32.46: SMAX=216.39: SK= .010]
      [InterEventTime=  12.00]
R0002:C00029-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    30.0 01:SW_1        3176.00   12.490 No_date   32:00   16.23 .357     .000
      [CN= 78.0: N= 3.00: Tp= 3.56]
      [IaREC= 4.00: SMIN= 29.88: SMAX=199.22: SK= .010]
      [InterEventTime=  12.00]
#
# Routing hydrographs
#
# Starting with the addition of Jock River Headwater and Subwatershed 13
#
R0002:C00030-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              30.0 02:JR_HW       3680.00    6.065 No_date   37:00   11.44  n/a     .000
                    +    30.0 02:SW_13        971.00    2.154 No_date   32:30   10.72  n/a     .000
                 SUM=    30.0 01:S_N13       4651.00    7.713 No_date   35:30   11.29  n/a     .000
#
# Sum of hydrographs from Node 13 routed to Node 13A
# (Approximated cross-section - see cross-section 258)
# Use n=0.04 for summer conditions and n=0.025 for spring conditions
#
R0002:C00031-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->   30.0 02:S_N13       4651.00    7.713 No_date   35:30   11.29  n/a     .000
     [RDT=30.00] out<-   30.0 01:N13A        4651.00    6.154 No_date   39:30   11.29  n/a     .000
      [L/S/n= 9074./ .022/.040]
      {Vmax=  .427:Dmax= 2.537}
#
# Addition of Subwatershed Jock River at Goodwood Marsh to Node 13A
#
R0002:C00032-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              30.0 02:N13A        4651.00    6.154 No_date   39:30   11.29  n/a     .000
                    +    30.0 02:JR_GWM      3074.00    3.115 No_date   39:30    9.41  n/a     .000
                 SUM=    30.0 01:SN13A       7725.00    9.269 No_date   39:30   10.54  n/a     .000
#
# Insertion of a reservoir to simulate the effects of the Goodwood Marsh
#
R0002:C00033-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->   30.0 02:SN13A       7725.00    9.269 No_date   39:30   10.54  n/a     .000
                out <=   30.0 01:RES_GM      7725.00    2.603 No_date   55:30   10.54  n/a     .000
     {MxStoUsed=.3498E+02  m3}
#
R0002:C00034-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD             30.0 01:RES_GM      7725.00    2.603 No_date   55:30   10.54  n/a     .000
      fname :H_RESGM
      remark:Outflow from Res GM
# Output of Reservoir Goodwood Marsh routed from Node 13A to Node 12
# (Approximated cross-section - see cross-section 258)
# Use n=0.04 for summer conditions and n=0.025 for spring conditions
R0002:C00035-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->   30.0 02:RES_GM      7725.00    2.603 No_date   55:30   10.54  n/a     .000
     [RDT=30.00] out<-   30.0 01:N12         7725.00    2.594 No_date   58:00   10.54  n/a     .000
      [L/S/n= 5926./ .076/.040]
      {Vmax=  .501:Dmax= 1.326}
#
# Addition of Subwatershed Jock River at Ashton to Node 12
#
R0002:C00036-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              30.0 02:N12         7725.00    2.594 No_date   58:00   10.54  n/a     .000
                    +    30.0 02:JR_ASH      1781.00    5.417 No_date   32:30   13.91  n/a     .000
                 SUM=    30.0 01:S_N12       9506.00    7.371 No_date   32:30   11.17  n/a     .000
R0002:C00037-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD             30.0 01:S_N12       9506.00    7.371 No_date   32:30   11.17  n/a     .000
      fname :H_SN12
      remark:flow at S_N12 near Ashton
#
# Sum of hydrographs from Node 12 routed to Node 11
# (Approximated cross-section - see cross-section 258)
# Use n=0.04 for summer conditions and n=0.025 for spring conditions
R0002:C00038-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->   30.0 02:S_N12       9506.00    7.371 No_date   32:30   11.17  n/a     .000
     [RDT=30.00] out<-   30.0 01:N11         9506.00    7.317 No_date   33:00   11.17  n/a     .000
      [L/S/n=  972./ .051/.040]
      {Vmax=  .580:Dmax= 2.119}
#
# Sum of hydrographs from Node 12 routed to Node 11 with Dummy section 248
#
R0002:C00039-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->   30.0 02:S_N12       9506.00    7.371 No_date   32:30   11.17  n/a     .000
     [RDT=30.00] out<-   30.0 01:Dum11       9506.00    7.320 No_date   33:00   11.17  n/a     .000
      [L/S/n=  972./ .054/.040]
      {Vmax=  .589:Dmax= 2.098}
#
# Addition of Subwatershed 11 and No Name Creek to Node 11
#
R0002:C00040-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              30.0 02:Dum11       9506.00    7.320 No_date   33:00   11.17  n/a     .000
                    +    30.0 02:SW_11        500.00    2.663 No_date   29:00   11.95  n/a     .000
                    +    30.0 02:NN_CK       1917.00    3.966 No_date   34:30   11.95  n/a     .000
                 SUM=    30.0 01:S_N11      11923.00   11.951 No_date   33:00   11.33  n/a     .000
#
# Sum of hydrographs from Node 11 routed to Node 10
# Section 1
#
R0002:C00041-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->   30.0 02:S_N11      11923.00   11.951 No_date   33:00   11.33  n/a     .000
     [RDT=30.00] out<-   30.0 01:N10        11923.00    8.216 No_date   39:30   11.33  n/a     .000
      [L/S/n=14028./ .157/.040]
      {Vmax=  .460:Dmax=  .881}
#
# Addition of Subwatershed 10 to Node 10
#
R0002:C00042-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              30.0 02:N10        11923.00    8.216 No_date   39:30   11.33  n/a     .000
```

```
                     +    30.0 02:SW_10       5666.00   10.936 No_date   38:00   13.91  n/a     .000
                  SUM=    30.0 01:S_N10      17589.00   19.098 No_date   38:30   12.16  n/a     .000
R0002:C00043------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              30.0 01:S_N10      17589.00   19.098 No_date   38:30   12.16  n/a     .000
      fname :H_SN10
      remark:flow at S_N10: N10 + SW_10
# Addition of Kings Creek to S_N10
#
R0002:C00044------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               30.0 02:S_N10      17589.00   19.098 No_date   38:30   12.16  n/a     .000
                     +    30.0 02:KG_CK       8376.00   10.656 No_date   39:30   11.95  n/a     .000
                  SUM=    30.0 01:S_N10A     25965.00   29.622 No_date   39:30   12.09  n/a     .000
#
# Sum of hydrographs from Node 10 routed to Node 9
# Section 2
#
R0002:C00045------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    30.0 02:S_N10A     25965.00   29.622 No_date   39:30   12.09  n/a     .000
     [RDT=30.00] out<-    30.0 01:N9         25965.00   28.881 No_date   39:30   12.09  n/a     .000
      [L/S/n= 3982./ .075/.040]
      {Vmax=  .591:Dmax= 1.193}
#
# Addition of Subwatershed 9 and Nichols Creek to Node 9
#
R0002:C00046------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               30.0 02:N9         25965.00   28.881 No_date   39:30   12.09  n/a     .000
                     +    30.0 02:SW_9        1132.00    4.365 No_date   30:30   13.32  n/a     .000
                     +    30.0 02:NC_CK       4464.00    5.312 No_date   39:30   10.96  n/a     .000
                  SUM=    30.0 01:S_N9       31561.00   35.488 No_date   39:30   11.98  n/a     .000
#
# Sum of hydrographs from Node 9 routed to Node 8
# Section 3
#
R0002:C00047------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    30.0 02:S_N9       31561.00   35.488 No_date   39:30   11.98  n/a     .000
     [RDT=30.00] out<-    30.0 01:N8         31561.00   33.301 No_date   40:00   11.98  n/a     .000
      [L/S/n= 2269./ .088/.045]
      {Vmax=  .420:Dmax= 1.270}
#
# Addition of Subwatershed 8 and Hobb's Drain to Node 8
#
R0002:C00048------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               30.0 02:N8         31561.00   33.301 No_date   40:00   11.98  n/a     .000
                     +    30.0 02:SW_8        131.00      .770 No_date   28:30   11.20  n/a     .000
                     +    30.0 02:HB_DR      3854.00     6.083 No_date   38:30   11.95  n/a     .000
                  SUM=    30.0 01:S_N8       35546.00   39.356 No_date   39:30   11.97  n/a     .000
#
# Sum of hydrographs from Node 8 routed to Node 7
# Section 4
#
R0002:C00049------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    30.0 02:S_N8       35546.00   39.356 No_date   39:30   11.97  n/a     .000
     [RDT=30.00] out<-    30.0 01:N7         35546.00   32.170 No_date   44:00   11.97  n/a     .000
      [L/S/n= 3750./ .053/.070]
      {Vmax=  .209:Dmax= 1.635}
#
# Addition of Subwatershed 7 to Node 7
#
R0002:C00050------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               30.0 02:N7         35546.00   32.170 No_date   44:00   11.97  n/a     .000
                     +    30.0 02:SW_7        3197.00    4.557 No_date   36:30    9.83  n/a     .000
                  SUM=    30.0 01:S_N7       38743.00   34.345 No_date   43:00   11.79  n/a     .000
R0002:C00051------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              30.0 01:S_N7       38743.00   34.345 No_date   43:00   11.79  n/a     .000
      fname :H_SN7
      remark:flow at S_N7: N7 + SW_7
# Insertion of a reservoir to simulate the effects of the Richmond Fen.
# Storage area and volumes were estimated from available topo maps.
# Release rate from fen was assumed to be controlled by the downstream
# river cross-section for summer conditions.  It is was assumed that for up to
# 0.75 m of water, the main channel of the river provided the storage.  Above
# this depth, the wetland starts to signigicantly store water.
#
R0002:C00052------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    30.0 02:S_N7       38743.00   34.345 No_date   43:00   11.79  n/a     .000
                out <=    30.0 01:RES_RF     38743.00   23.075 No_date   54:30   11.79  n/a     .000
     {MxStoUsed=.7399E+02  m3}
R0002:C00053------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              30.0 01:RES_RF     38743.00   23.075 No_date   54:30   11.79  n/a     .000
      fname :H_ResRF
      remark:outflow of Richmond Fen
#
# Sum of hydrographs from Node 7 routed to Node 6
# Section 5
#
R0002:C00054------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    30.0 02:RES_RF     38743.00   23.075 No_date   54:30   11.79  n/a     .000
     [RDT=30.00] out<-    30.0 01:N6         38743.00   23.052 No_date   56:00   11.79  n/a     .000
      [L/S/n= 3056./ .082/.025]
      {Vmax=  .431:Dmax=  .805}
#
# Addition of Subwatershed 6 and Van Gaal Drain to Node 6
#
R0002:C00055------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               30.0 02:N6         38743.00   23.052 No_date   56:00   11.79  n/a     .000
                     +    30.0 02:SW_6        165.00      .407 No_date   33:00   12.21  n/a     .000
                     +    30.0 02:VG_DR      1332.00     3.083 No_date   35:00   13.91  n/a     .000
                  SUM=    30.0 01:S_N6       40240.01   23.225 No_date   39:30   11.87  n/a     .000
#
# Sum of hydrographs from Node 6 routed to Node 5
# Section 6
#
R0002:C00056------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    30.0 02:S_N6       40240.01   23.225 No_date   39:30   11.87  n/a     .000
     [RDT=30.00] out<-    30.0 01:N5         40240.01   23.171 No_date   55:00   11.87  n/a     .000
      [L/S/n= 1852./ .054/.035]
      {Vmax=  .378:Dmax=  .915}
#
# Addition of Subwatershed 5 and Flowing Creek to Node 5
#
R0002:C00057------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               30.0 02:N5         40240.01   23.171 No_date   55:00   11.87  n/a     .000
                     +    30.0 02:SW_5        224.00     2.527 No_date   28:30   15.88  n/a     .000
                     +    30.0 02:FL_CK      4945.00    14.579 No_date   33:00   14.54  n/a     .000
                  SUM=    30.0 01:S_N5       45409.01   32.974 No_date   37:00   12.18  n/a     .000
#
# Sum of hydrographs from Node 5 routed to Node 5A
# Section 7
#
R0002:C00058------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    30.0 02:S_N5       45409.01   32.974 No_date   37:00   12.18  n/a     .000
     [RDT=30.00] out<-    30.0 01:N5A        45409.01   32.921 No_date   37:00   12.18  n/a     .000
      [L/S/n=  556./ .090/.040]
      {Vmax=  .443:Dmax=  .935}
#
# Addition of Subwatershed 5A1 and Subwatershed 5A2 to Node 5A
#
R0002:C00059------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               30.0 02:N5A        45409.01   32.921 No_date   37:00   12.18  n/a     .000
                     +    30.0 02:SW_5A2       20.00      .287 No_date   28:30   17.76  n/a     .000
                     +    30.0 02:SW_5A1     1412.00     3.007 No_date   38:00   15.19  n/a     .000
                  SUM=    30.0 01:S_N5A      46841.01   35.939 No_date   37:00   12.27  n/a     .000
#
# Sum of hydrographs from Node 5A routed to Node 4
# Section 8
#
R0002:C00060------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    30.0 02:S_N5A      46841.01   35.939 No_date   37:00   12.27  n/a     .000
     [RDT=30.00] out<-    30.0 01:N4         46841.01   35.066 No_date   39:00   12.27  n/a     .000
      [L/S/n= 4630./ .043/.035]
      {Vmax=  .693:Dmax= 2.836}
#
# Addition of Subwatershed 4 and Leamy Creek to Node 4
#
R0002:C00061------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               30.0 02:N4         46841.01   35.066 No_date   39:00   12.27  n/a     .000
                     +    30.0 02:SW_4        585.00     4.232 No_date   29:30   17.76  n/a     .000
                     +    30.0 02:LM_CK      1021.00     5.667 No_date   30:30   17.36  n/a     .000
                  SUM=    30.0 01:S_N4       48447.00   37.399 No_date   38:30   12.44  n/a     .000
R0002:C00062------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              30.0 01:S_N4       48447.00   37.399 No_date   38:30   12.44  n/a     .000
      fname :S_N4.0002
      remark:flow at S_N4
#
# Sum of hydrographs from Node 4 routed to Node 2
# Section 9
#
R0002:C00063------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    30.0 02:S_N4       48447.00   37.399 No_date   38:30   12.44  n/a     .000
     [RDT=30.00] out<-    30.0 01:N2         48447.00   37.299 No_date   39:00   12.44  n/a     .000
      [L/S/n= 1667./ .060/.040]
      {Vmax=  .714:Dmax= 2.841}
#
# Addition of Subwatershed 2 with Monohan Drain and Smith Drain to Node 2
#
R0002:C00064------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               30.0 02:N2         48447.00   37.299 No_date   39:00   12.44  n/a     .000
                     +    30.0 02:SW_2        177.00     1.996 No_date   28:30   15.88  n/a     .000
                     +    30.0 02:SM_DR      1122.00     5.257 No_date   31:30   17.76  n/a     .000
                     +    30.0 02:MO_DR      2737.00    11.338 No_date   31:30   15.53  n/a     .000
                  SUM=    30.0 01:S_N2       52483.00   45.676 No_date   33:30   12.73  n/a     .000
R0002:C00065------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              30.0 01:S_N2       52483.00   45.676 No_date   33:30   12.73  n/a     .000
      fname :H_SN2
      remark:flow at S_N2 Jock River Gauge at Moodie Dr.
#
# Sum of hydrographs from Node 2 routed to Node 1
# Section 10
#
R0002:C00066------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    30.0 02:S_N2       52483.00   45.676 No_date   33:30   12.73  n/a     .000
     [RDT=30.00] out<-    30.0 01:N1         52483.00   42.605 No_date   39:30   12.73  n/a     .000
      [L/S/n=10046./ .050/.040]
      {Vmax=  .767:Dmax= 2.662}
#
# Addition of Subwatershed 1 to Node 1
#
R0002:C00067------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               30.0 02:N1         52483.00   42.605 No_date   39:30   12.73  n/a     .000
                     +    30.0 02:SW_1        3176.00   12.490 No_date   32:00   16.23  n/a     .000
                  SUM=    30.0 01:N1         55659.00   49.164 No_date   36:30   12.93  n/a     .000
R0002:C00068------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              30.0 01:N1         55659.00   49.164 No_date   36:30   12.93  n/a     .000
      fname :N1.0002
      remark:total outflow of Jock River
##############################################################################
  ** END OF RUN :    4

*****************************************************************************************





 RUN#:COMMAND#
R0005:C00001-------------------------------------------------------------------------------------------
     START
      [TZERO =    .00 hrs on        0]
      [METOUT=   2    (1=imperial, 2=metric output)]
      [NSTORM=   1 ]
      [NRUN  = 0005 ]
#*****************************************************************************
#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
#*****************************************************************************
#  Project Name: [Jock River]    Project Number: [411-02]
#  Date        : 06-06-2003
#  Modeller    : [JoF]
#  Company     : JFSAinc.
#  License #   :  2549237
#*****************************************************************************
# CALIBRATION OF SUMMER MODEL PARAMETERS
# USING CONTINUOUS SIMULATIONS
# Rainfall data from JFSA raingauge installed at site + other gauges by the City
# Use data collected from May 1st to July 14, 2003
# ---------------------------------------------------------------------------
R0005:C00002-------------------------------------------------------------------------------------------
     READ STORM
      Filename = storm.001
      Comment  = Pluie SCS de 24 hres 1:5 ans pour Ottawa CDA
      [SDT=10.00:SDUR=  24.00:PTOT=  57.12]
R0005:C00003-------------------------------------------------------------------------------------------
     MODIFY STORM
      [RFACT=  1.00:TSHIFT= 960.00 min]
      [SDT=10.00:SDUR=  40.00:PTOT=  57.12]
R0005:C00004-------------------------------------------------------------------------------------------
     COMPUTE API
      [APIini= 50.00: APIkdy= .8500: APIkdt= .9989]
      {APImax= 90.83: APIavg= 60.09: APImin= 44.87}
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.32
R0005:C00005------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    30.0 01:JR_HW       3680.00    9.169 No_date   37:00   16.38 .287     .000
      [CN= 64.0: N= 3.00: Tp= 7.13]
      [IaREC= 4.00: SMIN= 57.05: SMAX=380.32: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.32
R0005:C00006------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    30.0 01:SW_13        971.00    3.350 No_date   32:30   15.27 .267     .000
      [CN= 61.0: N= 3.00: Tp= 3.76]
      [IaREC= 4.00: SMIN= 64.50: SMAX=430.01: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.80
R0005:C00007------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    30.0 01:JR_GWM      3074.00    4.511 No_date   39:30   13.20 .231     .000
      [CN= 55.0: N= 3.00: Tp=11.33]
      [IaREC= 4.00: SMIN= 83.24: SMAX=554.96: SK= .010]
      [InterEventTime=  12.00]
R0005:C00008------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    30.0 01:JR_ASH      1781.00    8.382 No_date   32:30   20.09 .352     .000
      [CN= 72.0: N= 3.00: Tp= 3.91]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
R0005:C00009------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    30.0 01:SW_11        500.00    4.260 No_date   29:00   17.15 .300     .000
      [CN= 66.0: N= 3.00: Tp= 1.24]
      [IaREC= 4.00: SMIN= 52.62: SMAX=350.79: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.80
R0005:C00010------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    30.0 01:NN_CK       1917.00    6.085 No_date   34:00   17.15 .300     .000
      [CN= 66.0: N= 3.00: Tp= 5.29]
      [IaREC= 4.00: SMIN= 52.62: SMAX=350.79: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.52
R0005:C00011------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    30.0 01:SW_10       5666.00   16.454 No_date   38:00   20.09 .352     .000
      [CN= 72.0: N= 3.00: Tp= 8.00]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.75
R0005:C00012------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    30.0 01:KG_CK       8376.00   15.668 No_date   39:30   17.15 .300     .000
      [CN= 66.0: N= 3.00: Tp=11.66]
      [IaREC= 4.00: SMIN= 52.62: SMAX=350.79: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.68
R0005:C00013------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    30.0 01:SW_9        1132.00    6.854 No_date   30:30   19.22 .336     .000
      [CN= 70.0: N= 3.00: Tp= 2.51]
      [IaREC= 4.00: SMIN= 43.07: SMAX=287.10: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.82
R0005:C00014------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    30.0 01:NC_CK       4464.00    7.795 No_date   39:30   15.63 .274     .000
      [CN= 62.0: N= 3.00: Tp=11.32]
      [IaREC= 4.00: SMIN= 61.90: SMAX=412.66: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.80
R0005:C00015------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
  * CONTINUOUS NASHYD    30.0 01:SW_8         131.00    1.239 No_date   28:30   16.00 .280     .000
      [CN= 63.0: N= 3.00: Tp=  .90]
      [IaREC= 4.00: SMIN= 59.42: SMAX=396.11: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.65
R0005:C00016------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    30.0 01:HB_DR       3854.00    9.126 No_date   38:30   17.15 .300     .000
      [CN= 66.0: N= 3.00: Tp= 8.42]
      [IaREC= 4.00: SMIN= 52.62: SMAX=350.79: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.82
R0005:C00017------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    30.0 01:SW_7        3197.00    6.873 No_date   36:00   13.87 .243     .000
      [CN= 57.0: N= 3.00: Tp= 6.65]
      [IaREC= 4.00: SMIN= 76.32: SMAX=508.81: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.75
R0005:C00018------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    30.0 01:SW_6         165.00     .630 No_date   33:00   17.55 .307     .000
      [CN= 67.0: N= 3.00: Tp= 4.18]
      [IaREC= 4.00: SMIN= 50.55: SMAX=336.97: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.67
R0005:C00019------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    30.0 01:VG_DR       1332.00    4.700 No_date   35:00   20.09 .352     .000
      [CN= 72.0: N= 3.00: Tp= 5.95]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
R0005:C00020------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
  * CONTINUOUS NASHYD    30.0 01:SW_5         224.00    3.985 No_date   28:30   22.94 .402     .000
      [CN= 77.0: N= 3.00: Tp=  .75]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.20
R0005:C00021------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    30.0 01:FL_CK       4945.00   22.432 No_date   33:00   21.01 .368     .000
      [CN= 74.0: N= 3.00: Tp= 4.45]
      [IaREC= 4.00: SMIN= 36.67: SMAX=244.49: SK= .010]
      [InterEventTime=  12.00]
R0005:C00022------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
  * CONTINUOUS NASHYD    30.0 01:SW_5A2        20.00     .448 No_date   28:30   25.59 .448     .000
      [CN= 81.0: N= 3.00: Tp=  .62]
      [IaREC= 4.00: SMIN= 25.21: SMAX=168.09: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.61
R0005:C00023------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
```

```
    CONTINUOUS NASHYD    30.0 01:SW_5A1      1412.00    4.515 No_date   37:30   21.96 .384     .000
      [CN= 75.0: N= 3.00: Tp= 8.00]
      [IaREC= 4.00: SMIN= 33.81: SMAX=225.43: SK= .010]
      [InterEventTime=  12.00]
R0005:C00024------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    30.0 01:SW_4         585.00    6.551 No_date   29:30   25.59 .448     .000
      [CN= 81.0: N= 3.00: Tp= 1.75]
      [IaREC= 4.00: SMIN= 25.21: SMAX=168.09: SK= .010]
      [InterEventTime=  12.00]
R0005:C00025------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    30.0 01:LM_CK       1021.00    8.738 No_date   30:30   25.04 .438     .000
      [CN= 80.0: N= 3.00: Tp= 2.46]
      [IaREC= 4.00: SMIN= 26.32: SMAX=175.50: SK= .010]
      [InterEventTime=  12.00]
R0005:C00026------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
 *  CONTINUOUS NASHYD    30.0 01:SW_2         177.00    3.149 No_date   28:30   22.94 .402     .000
      [CN= 77.0: N= 3.00: Tp=  .75]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0005:C00027------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    30.0 01:SM_DR       1122.00    8.043 No_date   31:30   25.59 .448     .000
      [CN= 81.0: N= 3.00: Tp= 3.25]
      [IaREC= 4.00: SMIN= 25.21: SMAX=168.09: SK= .010]
      [InterEventTime=  12.00]
R0005:C00028------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    30.0 01:MO_DR       2737.00   17.548 No_date   31:30   22.44 .393     .000
      [CN= 76.0: N= 3.00: Tp= 3.03]
      [IaREC= 4.00: SMIN= 32.46: SMAX=216.39: SK= .010]
      [InterEventTime=  12.00]
R0005:C00029------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    30.0 01:SW_1        3176.00   19.206 No_date   32:00   23.45 .411     .000
      [CN= 78.0: N= 3.00: Tp= 3.56]
      [IaREC= 4.00: SMIN= 29.88: SMAX=199.22: SK= .010]
      [InterEventTime=  12.00]
#
# Routing hydrographs
#
# Starting with the addition of Jock River Headwater and Subwatershed 13
#
R0005:C00030------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              30.0 02:JR_HW       3680.00    9.169 No_date   37:00   16.38  n/a     .000
                    +    30.0 02:SW_13        971.00    3.350 No_date   32:30   15.27  n/a     .000
                 SUM=    30.0 01:S_N13       4651.00   11.688 No_date   35:30   16.15  n/a     .000
#
# Sum of hydrographs from Node 13 routed to Node 13A
# (Approximated cross-section - see cross-section 258)
# Use n=0.04 for summer conditions and n=0.025 for spring conditions
#
R0005:C00031------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->   30.0 02:S_N13       4651.00   11.688 No_date   35:30   16.15  n/a     .000
     [RDT=30.00] out<-   30.0 01:N13A        4651.00    9.343 No_date   39:30   16.15  n/a     .000
      [L/S/n= 9074./ .022/.040]
      {Vmax=  .475:Dmax= 2.992}
#
# Addition of Subwatershed Jock River at Goodwood Marsh to Node 13A
#
R0005:C00032------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              30.0 02:N13A        4651.00    9.343 No_date   39:30   16.15  n/a     .000
                    +    30.0 02:JR_GWM      3074.00    4.511 No_date   39:30   13.20  n/a     .000
                 SUM=    30.0 01:SN13A       7725.00   13.855 No_date   39:30   14.97  n/a     .000
#
# Insertion of a reservoir to simulate the effects of the Goodwood Marsh
#
R0005:C00033------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->   30.0 02:SN13A       7725.00   13.855 No_date   39:30   14.97  n/a     .000
                out <=   30.0 01:RES_GM      7725.00    3.124 No_date   58:00   14.97  n/a     .000
     {MxStoUsed=.6193E+02  m3}
#
R0005:C00034------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD             30.0 01:RES_GM      7725.00    3.124 No_date   58:00   14.97  n/a     .000
      fname :H_RESGM
      remark:Outflow from Res GM
# Output of Reservoir Goodwood Marsh routed from Node 13A to Node 12
# (Approximated cross-section - see cross-section 258)
# Use n=0.04 for summer conditions and n=0.025 for spring conditions
R0005:C00035------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->   30.0 02:RES_GM      7725.00    3.124 No_date   58:00   14.97  n/a     .000
     [RDT=30.00] out<-   30.0 01:N12         7725.00    3.114 No_date   60:30   14.97  n/a     .000
      [L/S/n= 5926./ .076/.040]
      {Vmax=  .525:Dmax= 1.424}
#
# Addition of Subwatershed Jock River at Ashton to Node 12
#
R0005:C00036------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              30.0 02:N12         7725.00    3.114 No_date   60:30   14.97  n/a     .000
                    +    30.0 02:JR_ASH      1781.00    8.382 No_date   32:30   20.09  n/a     .000
                 SUM=    30.0 01:S_N12       9506.00   10.361 No_date   32:30   15.93  n/a     .000
R0005:C00037------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD             30.0 01:S_N12       9506.00   10.361 No_date   32:30   15.93  n/a     .000
      fname :H_SN12
      remark:flow at S_N12 near Ashton
#
# Sum of hydrographs from Node 12 routed to Node 11
# (Approximated cross-section - see cross-section 258)
# Use n=0.04 for summer conditions and n=0.025 for spring conditions
R0005:C00038------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->   30.0 02:S_N12       9506.00   10.361 No_date   32:30   15.93  n/a     .000
     [RDT=30.00] out<-   30.0 01:N11         9506.00   10.228 No_date   33:00   15.93  n/a     .000
      [L/S/n=  972./ .051/.040]
      {Vmax=  .634:Dmax= 2.417}
#
# Sum of hydrographs from Node 12 routed to Node 11 with Dummy section 248
#
R0005:C00039------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->   30.0 02:S_N12       9506.00   10.361 No_date   32:30   15.93  n/a     .000
     [RDT=30.00] out<-   30.0 01:Dum11       9506.00   10.240 No_date   33:00   15.93  n/a     .000
      [L/S/n=  972./ .054/.040]
      {Vmax=  .645:Dmax= 2.392}
#
# Addition of Subwatershed 11 and No Name Creek to Node 11
#
R0005:C00040------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              30.0 02:Dum11       9506.00   10.240 No_date   33:00   15.93  n/a     .000
                    +    30.0 02:SW_11        500.00    4.260 No_date   29:00   17.15  n/a     .000
                    +    30.0 02:NN_CK       1917.00    6.085 No_date   34:00   17.15  n/a     .000
                 SUM=    30.0 01:S_N11      11923.00   17.312 No_date   33:00   16.18  n/a     .000
#
# Sum of hydrographs from Node 11 routed to Node 10
# Section 1
#
R0005:C00041------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->   30.0 02:S_N11      11923.00   17.312 No_date   33:00   16.18  n/a     .000
     [RDT=30.00] out<-   30.0 01:N10        11923.00   11.896 No_date   38:30   16.18  n/a     .000
      [L/S/n=14028./ .157/.040]
      {Vmax=  .462:Dmax= 1.078}
#
# Addition of Subwatershed 10 to Node 10
#
R0005:C00042------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              30.0 02:N10        11923.00   11.896 No_date   38:30   16.18  n/a     .000
                    +    30.0 02:SW_10       5666.00   16.454 No_date   38:00   20.09  n/a     .000
                 SUM=    30.0 01:S_N10      17589.00   28.336 No_date   38:00   17.44  n/a     .000
R0005:C00043------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD             30.0 01:S_N10      17589.00   28.336 No_date   38:00   17.44  n/a     .000
      fname :H_SN10
      remark:flow at S_N10: N10 + SW_10
# Addition of Kings Creek to S_N10
#
R0005:C00044------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              30.0 02:S_N10      17589.00   28.336 No_date   38:00   17.44  n/a     .000
                    +    30.0 02:KG_CK       8376.00   15.668 No_date   39:30   17.15  n/a     .000
                 SUM=    30.0 01:S_N10A     25965.00   43.586 No_date   39:30   17.35  n/a     .000
#
# Sum of hydrographs from Node 10 routed to Node 9
# Section 2
#
R0005:C00045------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->   30.0 02:S_N10A     25965.00   43.586 No_date   39:30   17.35  n/a     .000
     [RDT=30.00] out<-   30.0 01:N9         25965.00   42.441 No_date   39:30   17.35  n/a     .000
      [L/S/n= 3982./ .075/.040]
      {Vmax=  .663:Dmax= 1.480}
#
# Addition of Subwatershed 9 and Nichols Creek to Node 9
#
R0005:C00046------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              30.0 02:N9         25965.00   42.441 No_date   39:30   17.35  n/a     .000
                    +    30.0 02:SW_9        1132.00    6.854 No_date   30:30   19.22  n/a     .000
                    +    30.0 02:NC_CK       4464.00    7.795 No_date   39:30   15.63  n/a     .000
                 SUM=    30.0 01:S_N9       31561.00   52.066 No_date   39:30   17.17  n/a     .000
#
# Sum of hydrographs from Node 9 routed to Node 8
# Section 3
#
R0005:C00047------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->   30.0 02:S_N9       31561.00   52.066 No_date   39:30   17.17  n/a     .000
     [RDT=30.00] out<-   30.0 01:N8         31561.00   48.431 No_date   40:00   17.17  n/a     .000
      [L/S/n= 2269./ .088/.045]
      {Vmax=  .371:Dmax= 1.510}
#
# Addition of Subwatershed 8 and Hobb's Drain to Node 8
#
R0005:C00048------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              30.0 02:N8         31561.00   48.431 No_date   40:00   17.17  n/a     .000
                    +    30.0 02:SW_8         131.00    1.239 No_date   28:30   16.00  n/a     .000
                    +    30.0 02:HB_DR       3854.00    9.126 No_date   38:30   17.15  n/a     .000
                 SUM=    30.0 01:S_N8       35546.00   57.169 No_date   39:30   17.17  n/a     .000
#
# Sum of hydrographs from Node 8 routed to Node 7
# Section 4
#
R0005:C00049------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->   30.0 02:S_N8       35546.00   57.169 No_date   39:30   17.17  n/a     .000
     [RDT=30.00] out<-   30.0 01:N7         35546.00   46.889 No_date   45:00   17.17  n/a     .000
      [L/S/n= 3750./ .053/.070]
      {Vmax=  .207:Dmax= 1.839}
#
# Addition of Subwatershed 7 to Node 7
#
R0005:C00050------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              30.0 02:N7         35546.00   46.889 No_date   45:00   17.17  n/a     .000
                    +    30.0 02:SW_7        3197.00    6.873 No_date   36:00   13.87  n/a     .000
                 SUM=    30.0 01:S_N7       38743.00   50.119 No_date   43:30   16.89  n/a     .000
R0005:C00051------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD             30.0 01:S_N7       38743.00   50.119 No_date   43:30   16.89  n/a     .000
      fname :H_SN7
      remark:flow at S_N7: N7 + SW_7
# Insertion of a reservoir to simulate the effects of the Richmond Fen.
# Storage area and volumes were estimated from available topo maps.
# Release rate from fen was assumed to be controlled by the downstream
# river cross-section for summer conditions.  It is was assumed that for up to
# 0.75 m of water, the main channel of the river provided the storage.  Above
# this depth, the wetland starts to signigicantly store water.
#
R0005:C00052------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->   30.0 02:S_N7       38743.00   50.119 No_date   43:30   16.89  n/a     .000
                out <=   30.0 01:RES_RF     38743.00   27.645 No_date   59:00   16.89  n/a     .000
     {MxStoUsed=.1713E+03  m3}
R0005:C00053------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD             30.0 01:RES_RF     38743.00   27.645 No_date   59:00   16.89  n/a     .000
      fname :H_ResRF
      remark:outflow of Richmond Fen
#
# Sum of hydrographs from Node 7 routed to Node 6
# Section 5
#
R0005:C00054------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->   30.0 02:RES_RF     38743.00   27.645 No_date   59:00   16.89  n/a     .000
     [RDT=30.00] out<-   30.0 01:N6         38743.00   27.614 No_date   60:00   16.89  n/a     .000
      [L/S/n= 3056./ .082/.025]
      {Vmax=  .458:Dmax=  .889}
#
# Addition of Subwatershed 6 and Van Gaal Drain to Node 6
#
R0005:C00055------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              30.0 02:N6         38743.00   27.614 No_date   60:00   16.89  n/a     .000
                    +    30.0 02:SW_6         165.00     .630 No_date   33:00   17.55  n/a     .000
                    +    30.0 02:VG_DR       1332.00    4.700 No_date   35:00   20.09  n/a     .000
                 SUM=    30.0 01:S_N6       40240.01   27.687 No_date   59:30   17.00  n/a     .000
#
# Sum of hydrographs from Node 6 routed to Node 5
# Section 6
#
R0005:C00056------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->   30.0 02:S_N6       40240.01   27.687 No_date   59:30   17.00  n/a     .000
     [RDT=30.00] out<-   30.0 01:N5         40240.01   27.652 No_date   59:30   17.00  n/a     .000
      [L/S/n= 1852./ .054/.035]
      {Vmax=  .396:Dmax=  .997}
#
# Addition of Subwatershed 5 and Flowing Creek to Node 5
#
R0005:C00057------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              30.0 02:N5         40240.01   27.652 No_date   59:30   17.00  n/a     .000
                    +    30.0 02:SW_5         224.00    3.985 No_date   28:30   22.94  n/a     .000
                    +    30.0 02:FL_CK       4945.00   22.432 No_date   33:00   21.01  n/a     .000
                 SUM=    30.0 01:S_N5       45409.01   43.197 No_date   35:00   17.47  n/a     .000
#
# Sum of hydrographs from Node 5 routed to Node 5A
# Section 7
#
R0005:C00058------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->   30.0 02:S_N5       45409.01   43.197 No_date   35:00   17.47  n/a     .000
     [RDT=30.00] out<-   30.0 01:N5A        45409.01   43.159 No_date   35:30   17.47  n/a     .000
      [L/S/n=  556./ .090/.040]
      {Vmax=  .464:Dmax= 1.057}
#
# Addition of Subwatershed 5A1 and Subwatershed 5A2 to Node 5A
#
R0005:C00059------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              30.0 02:N5A        45409.01   43.159 No_date   35:30   17.47  n/a     .000
                    +    30.0 02:SW_5A2        20.00     .448 No_date   28:30   25.59  n/a     .000
                    +    30.0 02:SW_5A1      1412.00    4.515 No_date   37:30   21.96  n/a     .000
                 SUM=    30.0 01:S_N5A      46841.01   47.514 No_date   35:30   17.61  n/a     .000
#
# Sum of hydrographs from Node 5A routed to Node 4
# Section 8
#
R0005:C00060------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->   30.0 02:S_N5A      46841.01   47.514 No_date   35:30   17.61  n/a     .000
     [RDT=30.00] out<-   30.0 01:N4         46841.01   45.852 No_date   37:30   17.61  n/a     .000
      [L/S/n= 4630./ .043/.035]
      {Vmax=  .753:Dmax= 3.105}
#
# Addition of Subwatershed 4 and Leamy Creek to Node 4
#
R0005:C00061------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              30.0 02:N4         46841.01   45.852 No_date   37:30   17.61  n/a     .000
                    +    30.0 02:SW_4         585.00    6.551 No_date   29:30   25.59  n/a     .000
                    +    30.0 02:LM_CK       1021.00    8.738 No_date   30:30   25.04  n/a     .000
                 SUM=    30.0 01:S_N4       48447.00   49.994 No_date   36:30   17.86  n/a     .000
R0005:C00062------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD             30.0 01:S_N4       48447.00   49.994 No_date   36:30   17.86  n/a     .000
      fname :S_N4.0005
      remark:flow at S_N4
#
# Sum of hydrographs from Node 4 routed to Node 2
# Section 9
#
R0005:C00063------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->   30.0 02:S_N4       48447.00   49.994 No_date   36:30   17.86  n/a     .000
     [RDT=30.00] out<-   30.0 01:N2         48447.00   49.884 No_date   37:00   17.86  n/a     .000
      [L/S/n= 1667./ .060/.040]
      {Vmax=  .780:Dmax= 3.124}
#
# Addition of Subwatershed 2 with Monohan Drain and Smith Drain to Node 2
#
R0005:C00064------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              30.0 02:N2         48447.00   49.884 No_date   37:00   17.86  n/a     .000
                    +    30.0 02:SW_2         177.00    3.149 No_date   28:30   22.94  n/a     .000
                    +    30.0 02:SM_DR       1122.00    8.043 No_date   31:30   25.59  n/a     .000
                    +    30.0 02:MO_DR       2737.00   17.548 No_date   31:30   22.44  n/a     .000
                 SUM=    30.0 01:S_N2       52483.00   66.292 No_date   33:00   18.28  n/a     .000
R0005:C00065------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD             30.0 01:S_N2       52483.00   66.292 No_date   33:00   18.28  n/a     .000
      fname :H_SN2
      remark:flow at S_N2 Jock River Gauge at Moodie Dr.
#
# Sum of hydrographs from Node 2 routed to Node 1
# Section 10
#
R0005:C00066------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->   30.0 02:S_N2       52483.00   66.292 No_date   33:00   18.28  n/a     .000
     [RDT=30.00] out<-   30.0 01:N1         52483.00   59.697 No_date   37:00   18.28  n/a     .000
      [L/S/n=10046./ .050/.040]
      {Vmax=  .861:Dmax= 3.201}
#
# Addition of Subwatershed 1 to Node 1
#
R0005:C00067------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              30.0 02:N1         52483.00   59.697 No_date   37:00   18.28  n/a     .000
                    +    30.0 02:SW_1        3176.00   19.206 No_date   32:00   23.45  n/a     .000
                 SUM=    30.0 01:N1         55659.00   72.079 No_date   35:00   18.58  n/a     .000
R0005:C00068------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD             30.0 01:N1         55659.00   72.079 No_date   35:00   18.58  n/a     .000
      fname :N1.0005
      remark:total outflow of Jock River
################################################################################
  ** END OF RUN :    9

****************************************************************************************************
 RUN#:COMMAND#
R0010:C00001----------------------------------------------------------------------------------------
     START
      [TZERO =    .00 hrs on        0]
      [METOUT=   2    (1=imperial, 2=metric output)]
      [NSTORM=   1 ]
      [NRUN  = 0010 ]
#*******************************************************************************
#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
#*******************************************************************************
#  Project Name: [Jock River]    Project Number: [411-02]
#  Date         : 06-06-2003
#  Modeller     : [JoF]
#  Company      : JFSAinc.
#  License #    :  2549237
#*******************************************************************************
# CALIBRATION OF SUMMER MODEL PARAMETERS
# USING CONTINUOUS SIMULATIONS
# Rainfall data from JFSA raingauge installed at site + other gauges by the City
# Use data collected from May 1st to July 14, 2003
# ------------------------------------------------------------------------------
R0010:C00002----------------------------------------------------------------------------------------
     READ STORM
      Filename = storm.001
      Comment  = Pluie SCS de 24 hres 1:10 ans pour Ottawa CDA
      [SDT=10.00:SDUR=  24.00:PTOT=  64.69]
R0010:C00003----------------------------------------------------------------------------------------
     MODIFY STORM
      [RFACT=  1.00:TSHIFT= 960.00 min]
      [SDT=10.00:SDUR=  40.00:PTOT=  64.69]
R0010:C00004----------------------------------------------------------------------------------------
     COMPUTE API
      [APIini= 50.00: APIkdy= .8500: APIkdt= .9989]
      {APImax= 97.81: APIavg= 62.29: APImin= 44.87}
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.32
R0010:C00005------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    30.0 01:JR_HW       3680.00   11.582 No_date   36:30   20.20 .312     .000
      [CN= 64.0: N= 3.00: Tp= 7.13]
```

```
       [IaREC= 4.00: SMIN= 57.05: SMAX=380.32: SK= .010]
       [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.32
R0010:C00006-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS NASHYD    30.0 01:SW_13        971.00    4.293 No_date   32:30   18.81 .291     .000
       [CN= 61.0: N= 3.00: Tp= 3.76]
       [IaREC= 4.00: SMIN= 64.50: SMAX=430.01: SK= .010]
       [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.80
R0010:C00007-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS NASHYD    30.0 01:JR_GWM      3074.00    5.604 No_date   39:30   16.19 .250     .000
       [CN= 55.0: N= 3.00: Tp=11.33]
       [IaREC= 4.00: SMIN= 83.24: SMAX=554.96: SK= .010]
       [InterEventTime=  12.00]
R0010:C00008-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS NASHYD    30.0 01:JR_ASH      1781.00   10.659 No_date   32:30   24.78 .383     .000
       [CN= 72.0: N= 3.00: Tp= 3.91]
       [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
       [InterEventTime=  12.00]
R0010:C00009-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS NASHYD    30.0 01:SW_11        500.00    5.516 No_date   29:00   21.17 .327     .000
       [CN= 66.0: N= 3.00: Tp= 1.24]
       [IaREC= 4.00: SMIN= 52.62: SMAX=350.79: SK= .010]
       [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.80
R0010:C00010-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS NASHYD    30.0 01:NN_CK       1917.00    7.737 No_date   34:00   21.17 .327     .000
       [CN= 66.0: N= 3.00: Tp= 5.29]
       [IaREC= 4.00: SMIN= 52.62: SMAX=350.79: SK= .010]
       [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.52
R0010:C00011-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS NASHYD    30.0 01:SW_10       5666.00   20.651 No_date   37:30   24.78 .383     .000
       [CN= 72.0: N= 3.00: Tp= 8.00]
       [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
       [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.75
R0010:C00012-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS NASHYD    30.0 01:KG_CK       8376.00   19.522 No_date   39:30   21.17 .327     .000
       [CN= 66.0: N= 3.00: Tp=11.66]
       [IaREC= 4.00: SMIN= 52.62: SMAX=350.79: SK= .010]
       [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.68
R0010:C00013-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS NASHYD    30.0 01:SW_9        1132.00    8.783 No_date   30:30   23.71 .366     .000
       [CN= 70.0: N= 3.00: Tp= 2.51]
       [IaREC= 4.00: SMIN= 43.07: SMAX=287.10: SK= .010]
       [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.82
R0010:C00014-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS NASHYD    30.0 01:NC_CK       4464.00    9.718 No_date   39:30   19.27 .298     .000
       [CN= 62.0: N= 3.00: Tp=11.32]
       [IaREC= 4.00: SMIN= 61.90: SMAX=412.66: SK= .010]
       [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.80
R0010:C00015-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
  *  CONTINUOUS NASHYD    30.0 01:SW_8         131.00    1.610 No_date   28:30   19.73 .305     .000
       [CN= 63.0: N= 3.00: Tp=  .90]
       [IaREC= 4.00: SMIN= 59.42: SMAX=396.11: SK= .010]
       [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.65
R0010:C00016-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS NASHYD    30.0 01:HB_DR       3854.00   11.473 No_date   38:30   21.17 .327     .000
       [CN= 66.0: N= 3.00: Tp= 8.42]
       [IaREC= 4.00: SMIN= 52.62: SMAX=350.79: SK= .010]
       [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.82
R0010:C00017-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS NASHYD    30.0 01:SW_7        3197.00    8.697 No_date   36:00   17.04 .263     .000
       [CN= 57.0: N= 3.00: Tp= 6.65]
       [IaREC= 4.00: SMIN= 76.32: SMAX=508.81: SK= .010]
       [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.75
R0010:C00018-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS NASHYD    30.0 01:SW_6         165.00     .804 No_date   33:00   21.66 .335     .000
       [CN= 67.0: N= 3.00: Tp= 4.18]
       [IaREC= 4.00: SMIN= 50.55: SMAX=336.97: SK= .010]
       [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.67
R0010:C00019-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS NASHYD    30.0 01:VG_DR       1332.00    5.936 No_date   35:00   24.78 .383     .000
       [CN= 72.0: N= 3.00: Tp= 5.95]
       [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
       [InterEventTime=  12.00]
R0010:C00020-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
  *  CONTINUOUS NASHYD    30.0 01:SW_5         224.00    5.097 No_date   28:30   28.21 .436     .000
       [CN= 77.0: N= 3.00: Tp=  .75]
       [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
       [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.20
R0010:C00021-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS NASHYD    30.0 01:FL_CK       4945.00   28.428 No_date   33:00   25.89 .400     .000
       [CN= 74.0: N= 3.00: Tp= 4.45]
       [IaREC= 4.00: SMIN= 36.67: SMAX=244.49: SK= .010]
       [InterEventTime=  12.00]
R0010:C00022-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
  *  CONTINUOUS NASHYD    30.0 01:SW_5A2        20.00     .569 No_date   28:30   31.34 .484     .000
       [CN= 81.0: N= 3.00: Tp=  .62]
       [IaREC= 4.00: SMIN= 25.21: SMAX=168.09: SK= .010]
       [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.61
R0010:C00023-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS NASHYD    30.0 01:SW_5A1      1412.00    5.651 No_date   37:30   27.03 .418     .000
       [CN= 75.0: N= 3.00: Tp= 8.00]
       [IaREC= 4.00: SMIN= 33.81: SMAX=225.43: SK= .010]
       [InterEventTime=  12.00]
R0010:C00024-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS NASHYD    30.0 01:SW_4         585.00    8.289 No_date   29:30   31.34 .484     .000
       [CN= 81.0: N= 3.00: Tp= 1.75]
       [IaREC= 4.00: SMIN= 25.21: SMAX=168.09: SK= .010]
       [InterEventTime=  12.00]
R0010:C00025-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS NASHYD    30.0 01:LM_CK       1021.00   11.041 No_date   30:30   30.69 .474     .000
       [CN= 80.0: N= 3.00: Tp= 2.46]
       [IaREC= 4.00: SMIN= 26.32: SMAX=175.50: SK= .010]
       [InterEventTime=  12.00]
R0010:C00026-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
  *  CONTINUOUS NASHYD    30.0 01:SW_2         177.00    4.027 No_date   28:30   28.21 .436     .000
       [CN= 77.0: N= 3.00: Tp=  .75]
       [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
       [InterEventTime=  12.00]
R0010:C00027-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS NASHYD    30.0 01:SM_DR       1122.00   10.121 No_date   31:30   31.34 .484     .000
       [CN= 81.0: N= 3.00: Tp= 3.25]
       [IaREC= 4.00: SMIN= 25.21: SMAX=168.09: SK= .010]
       [InterEventTime=  12.00]
R0010:C00028-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS NASHYD    30.0 01:MO_DR       2737.00   22.263 No_date   31:30   27.61 .427     .000
       [CN= 76.0: N= 3.00: Tp= 3.03]
       [IaREC= 4.00: SMIN= 32.46: SMAX=216.39: SK= .010]
       [InterEventTime=  12.00]
R0010:C00029-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS NASHYD    30.0 01:SW_1        3176.00   24.273 No_date   32:00   28.81 .445     .000
       [CN= 78.0: N= 3.00: Tp= 3.56]
       [IaREC= 4.00: SMIN= 29.88: SMAX=199.22: SK= .010]
       [InterEventTime=  12.00]
#
# Routing hydrographs
#
# Starting with the addition of Jock River Headwater and Subwatershed 13
#
R0010:C00030-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD              30.0 02:JR_HW       3680.00   11.582 No_date   36:30   20.20  n/a     .000
                     +    30.0 02:SW_13        971.00    4.293 No_date   32:30   18.81  n/a     .000
                  SUM=    30.0 01:S_N13       4651.00   14.791 No_date   35:00   19.91  n/a     .000
#
# Sum of hydrographs from Node 13 routed to Node 13A
# (Approximated cross-section - see cross-section 258)
# Use n=0.04 for summer conditions and n=0.025 for spring conditions
#
R0010:C00031-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE CHANNEL   ->   30.0 02:S_N13       4651.00   14.791 No_date   35:00   19.91  n/a     .000
      [RDT=30.00] out<-   30.0 01:N13A        4651.00   11.868 No_date   39:30   19.91  n/a     .000
       [L/S/n= 9074./ .022/.040]
       {Vmax=  .505:Dmax= 3.276}
#
# Addition of Subwatershed Jock River at Goodwood Marsh to Node 13A
#
R0010:C00032-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD              30.0 02:N13A        4651.00   11.868 No_date   39:30   19.91  n/a     .000
                     +    30.0 02:JR_GWM      3074.00    5.604 No_date   39:30   16.19  n/a     .000
                  SUM=    30.0 01:SN13A       7725.00   17.472 No_date   39:30   18.43  n/a     .000
#
# Insertion of a reservoir to simulate the effects of the Goodwood Marsh
#
R0010:C00033-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE RESERVOIR ->   30.0 02:SN13A       7725.00   17.472 No_date   39:30   18.43  n/a     .000
                 out <=   30.0 01:RES_GM      7725.00    3.517 No_date   59:00   18.43  n/a     .000
      {MxStoUsed=.8337E+02  m3}
#
R0010:C00034-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     SAVE HYD             30.0 01:RES_GM      7725.00    3.517 No_date   59:00   18.43  n/a     .000
       fname :H_RESGM
       remark:Outflow from Res GM
# Output of Reservoir Goodwood Marsh routed from Node 13A to Node 12
# (Approximated cross-section - see cross-section 258)
# Use n=0.04 for summer conditions and n=0.025 for spring conditions
R0010:C00035-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE CHANNEL   ->   30.0 02:RES_GM      7725.00    3.517 No_date   59:00   18.43  n/a     .000
      [RDT=30.00] out<-   30.0 01:N12         7725.00    3.511 No_date   63:00   18.43  n/a     .000
       [L/S/n= 5926./ .076/.040]
       {Vmax=  .546:Dmax= 1.498}
#
# Addition of Subwatershed Jock River at Ashton to Node 12
#
R0010:C00036-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD              30.0 02:N12         7725.00    3.511 No_date   63:00   18.43  n/a     .000
                     +    30.0 02:JR_ASH      1781.00   10.659 No_date   32:30   24.78  n/a     .000
                  SUM=    30.0 01:S_N12       9506.00   12.656 No_date   32:30   19.62  n/a     .000
R0010:C00037-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     SAVE HYD             30.0 01:S_N12       9506.00   12.656 No_date   32:30   19.62  n/a     .000
       fname :H_SN12
       remark:flow at S_N12 near Ashton
#
# Sum of hydrographs from Node 12 routed to Node 11
# (Approximated cross-section - see cross-section 258)
# Use n=0.04 for summer conditions and n=0.025 for spring conditions
R0010:C00038-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE CHANNEL   ->   30.0 02:S_N12       9506.00   12.656 No_date   32:30   19.62  n/a     .000
      [RDT=30.00] out<-   30.0 01:N11         9506.00   12.477 No_date   33:00   19.62  n/a     .000
       [L/S/n=  972./ .051/.040]
       {Vmax=  .665:Dmax= 2.609}
#
# Sum of hydrographs from Node 12 routed to Node 11 with Dummy section 248
#
R0010:C00039-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE CHANNEL   ->   30.0 02:S_N12       9506.00   12.656 No_date   32:30   19.62  n/a     .000
      [RDT=30.00] out<-   30.0 01:Dum11       9506.00   12.493 No_date   33:00   19.62  n/a     .000
       [L/S/n=  972./ .054/.040]
       {Vmax=  .677:Dmax= 2.584}
#
# Addition of Subwatershed 11 and No Name Creek to Node 11
#
R0010:C00040-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD              30.0 02:Dum11       9506.00   12.493 No_date   33:00   19.62  n/a     .000
                     +    30.0 02:SW_11        500.00    5.516 No_date   29:00   21.17  n/a     .000
                     +    30.0 02:NN_CK       1917.00    7.737 No_date   34:00   21.17  n/a     .000
                  SUM=    30.0 01:S_N11      11923.00   21.461 No_date   33:00   19.93  n/a     .000
#
# Sum of hydrographs from Node 11 routed to Node 10
# Section 1
#
R0010:C00041-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE CHANNEL   ->   30.0 02:S_N11      11923.00   21.461 No_date   33:00   19.93  n/a     .000
      [RDT=30.00] out<-   30.0 01:N10        11923.00   14.609 No_date   39:30   19.93  n/a     .000
       [L/S/n=14028./ .157/.040]
       {Vmax=  .451:Dmax= 1.206}
#
# Addition of Subwatershed 10 to Node 10
#
R0010:C00042-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD              30.0 02:N10        11923.00   14.609 No_date   39:30   19.93  n/a     .000
                     +    30.0 02:SW_10       5666.00   20.651 No_date   37:30   24.78  n/a     .000
                  SUM=    30.0 01:S_N10      17589.00   35.073 No_date   38:30   21.50  n/a     .000
R0010:C00043-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     SAVE HYD             30.0 01:S_N10      17589.00   35.073 No_date   38:30   21.50  n/a     .000
       fname :H_SN10
       remark:flow at S_N10: N10 + SW_10
# Addition of Kings Creek to S_N10
#
R0010:C00044-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD              30.0 02:S_N10      17589.00   35.073 No_date   38:30   21.50  n/a     .000
                     +    30.0 02:KG_CK       8376.00   19.522 No_date   39:30   21.17  n/a     .000
                  SUM=    30.0 01:S_N10A     25965.00   54.317 No_date   39:30   21.39  n/a     .000
#
# Sum of hydrographs from Node 10 routed to Node 9
# Section 2
#
R0010:C00045-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE CHANNEL   ->   30.0 02:S_N10A     25965.00   54.317 No_date   39:30   21.39  n/a     .000
      [RDT=30.00] out<-   30.0 01:N9         25965.00   52.431 No_date   39:30   21.39  n/a     .000
       [L/S/n= 3982./ .075/.040]
       {Vmax=  .679:Dmax= 1.676}
#
# Addition of Subwatershed 9 and Nichols Creek to Node 9
#
R0010:C00046-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD              30.0 02:N9         25965.00   52.431 No_date   39:30   21.39  n/a     .000
                     +    30.0 02:SW_9        1132.00    8.783 No_date   30:30   23.71  n/a     .000
                     +    30.0 02:NC_CK       4464.00    9.718 No_date   39:30   19.27  n/a     .000
                  SUM=    30.0 01:S_N9       31561.00   64.367 No_date   39:30   21.17  n/a     .000
#
# Sum of hydrographs from Node 9 routed to Node 8
# Section 3
#
R0010:C00047-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE CHANNEL   ->   30.0 02:S_N9       31561.00   64.367 No_date   39:30   21.17  n/a     .000
      [RDT=30.00] out<-   30.0 01:N8         31561.00   60.135 No_date   40:00   21.17  n/a     .000
       [L/S/n= 2269./ .088/.045]
       {Vmax=  .364:Dmax= 1.604}
#
# Addition of Subwatershed 8 and Hobb's Drain to Node 8
#
R0010:C00048-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD              30.0 02:N8         31561.00   60.135 No_date   40:00   21.17  n/a     .000
                     +    30.0 02:SW_8         131.00    1.610 No_date   28:30   19.73  n/a     .000
                     +    30.0 02:HB_DR       3854.00   11.473 No_date   38:30   21.17  n/a     .000
                  SUM=    30.0 01:S_N8       35546.00   71.021 No_date   39:30   21.17  n/a     .000
#
# Sum of hydrographs from Node 8 routed to Node 7
# Section 4
#
R0010:C00049-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE CHANNEL   ->   30.0 02:S_N8       35546.00   71.021 No_date   39:30   21.17  n/a     .000
      [RDT=30.00] out<-   30.0 01:N7         35546.00   59.731 No_date   44:30   21.17  n/a     .000
       [L/S/n= 3750./ .053/.070]
       {Vmax=  .216:Dmax= 1.966}
#
# Addition of Subwatershed 7 to Node 7
#
R0010:C00050-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD              30.0 02:N7         35546.00   59.731 No_date   44:30   21.17  n/a     .000
                     +    30.0 02:SW_7        3197.00    8.697 No_date   36:00   17.04  n/a     .000
                  SUM=    30.0 01:S_N7       38743.00   64.039 No_date   44:00   20.83  n/a     .000
R0010:C00051-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     SAVE HYD             30.0 01:S_N7       38743.00   64.039 No_date   44:00   20.83  n/a     .000
       fname :H_SN7
       remark:flow at S_N7: N7 + SW_7
# Insertion of a reservoir to simulate the effects of the Richmond Fen.
# Storage area and volumes were estimated from available topo maps.
# Release rate from fen was assumed to be controlled by the downstream
# river cross-section for summer conditions.  It is was assumed that for up to
# 0.75 m of water, the main channel of the river provided the storage.  Above
# this depth, the wetland starts to signigicantly store water.
#
R0010:C00052-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE RESERVOIR ->   30.0 02:S_N7       38743.00   64.039 No_date   44:00   20.83  n/a     .000
                 out <=   30.0 01:RES_RF     38743.00   31.370 No_date   60:30   20.83  n/a     .000
      {MxStoUsed=.2507E+03  m3}
R0010:C00053-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     SAVE HYD             30.0 01:RES_RF     38743.00   31.370 No_date   60:30   20.83  n/a     .000
       fname :H_ResRF
       remark:outflow of Richmond Fen
#
# Sum of hydrographs from Node 7 routed to Node 6
# Section 5
#
R0010:C00054-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE CHANNEL   ->   30.0 02:RES_RF     38743.00   31.370 No_date   60:30   20.83  n/a     .000
      [RDT=30.00] out<-   30.0 01:N6         38743.00   31.314 No_date   62:00   20.83  n/a     .000
       [L/S/n= 3056./ .082/.025]
       {Vmax=  .475:Dmax=  .953}
#
# Addition of Subwatershed 6 and Van Gaal Drain to Node 6
#
R0010:C00055-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD              30.0 02:N6         38743.00   31.314 No_date   62:00   20.83  n/a     .000
                     +    30.0 02:SW_6         165.00     .804 No_date   33:00   21.66  n/a     .000
                     +    30.0 02:VG_DR       1332.00    5.936 No_date   35:00   24.78  n/a     .000
                  SUM=    30.0 01:S_N6       40240.01   31.366 No_date   61:00   20.96  n/a     .000
#
# Sum of hydrographs from Node 6 routed to Node 5
# Section 6
#
R0010:C00056-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE CHANNEL   ->   30.0 02:S_N6       40240.01   31.366 No_date   61:00   20.96  n/a     .000
      [RDT=30.00] out<-   30.0 01:N5         40240.01   31.341 No_date   62:00   20.96  n/a     .000
       [L/S/n= 1852./ .054/.035]
       {Vmax=  .411:Dmax= 1.064}
#
# Addition of Subwatershed 5 and Flowing Creek to Node 5
#
R0010:C00057-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD              30.0 02:N5         40240.01   31.341 No_date   62:00   20.96  n/a     .000
                     +    30.0 02:SW_5         224.00    5.097 No_date   28:30   28.21  n/a     .000
                     +    30.0 02:FL_CK       4945.00   28.428 No_date   33:00   25.89  n/a     .000
```

```
                  SUM=    30.0 01:S_N5       45409.01   50.940 No_date   34:30   21.53  n/a     .000
#
# Sum of hydrographs from Node 5 routed to Node 5A
# Section 7
#
R0010:C00058------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->   30.0 02:S_N5       45409.01   50.940 No_date   34:30   21.53  n/a     .000
     [RDT=30.00] out<-   30.0 01:N5A        45409.01   50.883 No_date   35:00   21.53  n/a     .000
      [L/S/n=  556./ .090/.040]
      {Vmax=  .484:Dmax= 1.127}
#
# Addition of Subwatershed 5A1 and Subwatershed 5A2 to Node 5A
#
R0010:C00059------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              30.0 02:N5A        45409.01   50.883 No_date   35:00   21.53  n/a     .000
                     +   30.0 02:SW_5A2        20.00     .569 No_date   28:30   31.34  n/a     .000
                     +   30.0 02:SW_5A1      1412.00    5.651 No_date   37:30   27.03  n/a     .000
                  SUM=   30.0 01:S_N5A      46841.01   56.195 No_date   35:00   21.70  n/a     .000
#
# Sum of hydrographs from Node 5A routed to Node 4
# Section 8
#
R0010:C00060------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->   30.0 02:S_N5A      46841.01   56.195 No_date   35:00   21.70  n/a     .000
     [RDT=30.00] out<-   30.0 01:N4         46841.01   54.050 No_date   36:30   21.70  n/a     .000
      [L/S/n= 4630./ .043/.035]
      {Vmax=  .790:Dmax= 3.283}
#
# Addition of Subwatershed 4 and Leamy Creek to Node 4
#
R0010:C00061------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              30.0 02:N4         46841.01   54.050 No_date   36:30   21.70  n/a     .000
                     +   30.0 02:SW_4         585.00    8.289 No_date   29:30   31.34  n/a     .000
                     +   30.0 02:LM_CK       1021.00   11.041 No_date   30:30   30.69  n/a     .000
                  SUM=   30.0 01:S_N4       48447.00   59.486 No_date   36:00   22.01  n/a     .000
R0010:C00062------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD             30.0 01:S_N4       48447.00   59.486 No_date   36:00   22.01  n/a     .000
      fname :S_N4.0010
      remark:flow at S_N4
#
# Sum of hydrographs from Node 4 routed to Node 2
# Section 9
#
R0010:C00063------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->   30.0 02:S_N4       48447.00   59.486 No_date   36:00   22.01  n/a     .000
     [RDT=30.00] out<-   30.0 01:N2         48447.00   59.258 No_date   36:00   22.01  n/a     .000
      [L/S/n= 1667./ .060/.040]
      {Vmax=  .822:Dmax= 3.316}
#
# Addition of Subwatershed 2 with Monohan Drain and Smith Drain to Node 2
#
R0010:C00064------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              30.0 02:N2         48447.00   59.258 No_date   36:00   22.01  n/a     .000
                     +   30.0 02:SW_2         177.00    4.027 No_date   28:30   28.21  n/a     .000
                     +   30.0 02:SM_DR       1122.00   10.121 No_date   31:30   31.34  n/a     .000
                     +   30.0 02:MO_DR       2737.00   22.263 No_date   31:30   27.61  n/a     .000
                  SUM=   30.0 01:S_N2       52483.00   82.076 No_date   33:00   22.52  n/a     .000
R0010:C00065------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD             30.0 01:S_N2       52483.00   82.076 No_date   33:00   22.52  n/a     .000
      fname :H_SN2
      remark:flow at S_N2 Jock River Gauge at Moodie Dr.
#
# Sum of hydrographs from Node 2 routed to Node 1
# Section 10
#
R0010:C00066------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->   30.0 02:S_N2       52483.00   82.076 No_date   33:00   22.52  n/a     .000
     [RDT=30.00] out<-   30.0 01:N1         52483.00   72.984 No_date   36:30   22.52  n/a     .000
      [L/S/n=10046./ .050/.040]
      {Vmax=  .924:Dmax= 3.539}
#
# Addition of Subwatershed 1 to Node 1
#
R0010:C00067------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              30.0 02:N1         52483.00   72.984 No_date   36:30   22.52  n/a     .000
                     +   30.0 02:SW_1        3176.00   24.273 No_date   32:00   28.81  n/a     .000
                  SUM=   30.0 01:N1         55659.00   89.955 No_date   34:30   22.88  n/a     .000
R0010:C00068------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD             30.0 01:N1         55659.00   89.955 No_date   34:30   22.88  n/a     .000
      fname :N1.0010
      remark:total outflow of Jock River
###############################################################################
  ** END OF RUN :   24

****************************************************************************************************





 RUN#:COMMAND#
R0025:C00001----------------------------------------------------------------------------------------
     START
      [TZERO =    .00 hrs on        0]
      [METOUT=   2    (1=imperial, 2=metric output)]
      [NSTORM=   1 ]
      [NRUN  = 0025 ]
#******************************************************************************
#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
#******************************************************************************
#  Project Name: [Jock River]    Project Number: [411-02]
#  Date        : 06-06-2003
#  Modeller    : [JoF]
#  Company     : JFSAinc.
#  License #   :  2549237
#******************************************************************************
# CALIBRATION OF SUMMER MODEL PARAMETERS
# USING CONTINUOUS SIMULATIONS
# Rainfall data from JFSA raingauge installed at site + other gauges by the City
# Use data collected from May 1st to July 14, 2003
# ----------------------------------------------------------------------------
R0025:C00002----------------------------------------------------------------------------------------
     READ STORM
      Filename = storm.001
      Comment  = Pluie SCS de 24 hres 1:25 ans pour Ottawa CDA
      [SDT=10.00:SDUR=  24.00:PTOT=  74.39]
R0025:C00003----------------------------------------------------------------------------------------
     MODIFY STORM
      [RFACT=  1.00:TSHIFT= 960.00 min]
      [SDT=10.00:SDUR=  40.00:PTOT=  74.39]
R0025:C00004----------------------------------------------------------------------------------------
     COMPUTE API
      [APIini= 50.00: APIkdy= .8500: APIkdt= .9989]
      {APImax=106.76: APIavg= 65.09: APImin= 44.87}
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.32
R0025:C00005------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    30.0 01:JR_HW       3680.00   15.104 No_date   36:30   25.77 .346     .000
      [CN= 64.0: N= 3.00: Tp= 7.13]
      [IaREC= 4.00: SMIN= 57.05: SMAX=380.32: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.32
R0025:C00006------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    30.0 01:SW_13        971.00    5.679 No_date   32:30   24.00 .323     .000
      [CN= 61.0: N= 3.00: Tp= 3.76]
      [IaREC= 4.00: SMIN= 64.50: SMAX=430.01: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.80
R0025:C00007------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    30.0 01:JR_GWM      3074.00    7.216 No_date   39:30   20.63 .277     .000
      [CN= 55.0: N= 3.00: Tp=11.33]
      [IaREC= 4.00: SMIN= 83.24: SMAX=554.96: SK= .010]
      [InterEventTime=  12.00]
R0025:C00008------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    30.0 01:JR_ASH      1781.00   13.927 No_date   32:30   31.47 .423     .000
      [CN= 72.0: N= 3.00: Tp= 3.91]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
R0025:C00009------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    30.0 01:SW_11        500.00    7.356 No_date   29:00   26.99 .363     .000
      [CN= 66.0: N= 3.00: Tp= 1.24]
      [IaREC= 4.00: SMIN= 52.62: SMAX=350.79: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.80
R0025:C00010------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    30.0 01:NN_CK       1917.00   10.139 No_date   34:00   26.99 .363     .000
      [CN= 66.0: N= 3.00: Tp= 5.29]
      [IaREC= 4.00: SMIN= 52.62: SMAX=350.79: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.52
R0025:C00011------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    30.0 01:SW_10       5666.00   26.665 No_date   37:30   31.47 .423     .000
      [CN= 72.0: N= 3.00: Tp= 8.00]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.75
R0025:C00012------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    30.0 01:KG_CK       8376.00   25.107 No_date   39:30   26.99 .363     .000
      [CN= 66.0: N= 3.00: Tp=11.66]
      [IaREC= 4.00: SMIN= 52.62: SMAX=350.79: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.68
R0025:C00013------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    30.0 01:SW_9        1132.00   11.574 No_date   30:30   30.15 .405     .000
      [CN= 70.0: N= 3.00: Tp= 2.51]
      [IaREC= 4.00: SMIN= 43.07: SMAX=287.10: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.82
R0025:C00014------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    30.0 01:NC_CK       4464.00   12.525 No_date   39:30   24.58 .330     .000
      [CN= 62.0: N= 3.00: Tp=11.32]
      [IaREC= 4.00: SMIN= 61.90: SMAX=412.66: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.80
R0025:C00015------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
 *  CONTINUOUS NASHYD    30.0 01:SW_8         131.00    2.156 No_date   28:30   25.17 .338     .000
      [CN= 63.0: N= 3.00: Tp=  .90]
      [IaREC= 4.00: SMIN= 59.42: SMAX=396.11: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.65
R0025:C00016------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    30.0 01:HB_DR       3854.00   14.880 No_date   38:30   26.99 .363     .000
      [CN= 66.0: N= 3.00: Tp= 8.42]
      [IaREC= 4.00: SMIN= 52.62: SMAX=350.79: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.82
R0025:C00017------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    30.0 01:SW_7        3197.00   11.391 No_date   36:00   21.73 .292     .000
      [CN= 57.0: N= 3.00: Tp= 6.65]
      [IaREC= 4.00: SMIN= 76.32: SMAX=508.81: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.75
R0025:C00018------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    30.0 01:SW_6         165.00    1.056 No_date   33:00   27.61 .371     .000
      [CN= 67.0: N= 3.00: Tp= 4.18]
      [IaREC= 4.00: SMIN= 50.55: SMAX=336.97: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.67
R0025:C00019------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    30.0 01:VG_DR       1332.00    7.707 No_date   35:00   31.47 .423     .000
      [CN= 72.0: N= 3.00: Tp= 5.95]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
R0025:C00020------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
 *  CONTINUOUS NASHYD    30.0 01:SW_5         224.00    6.682 No_date   28:30   35.63 .479     .000
      [CN= 77.0: N= 3.00: Tp=  .75]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.20
R0025:C00021------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    30.0 01:FL_CK       4945.00   36.990 No_date   33:00   32.82 .441     .000
      [CN= 74.0: N= 3.00: Tp= 4.45]
      [IaREC= 4.00: SMIN= 36.67: SMAX=244.49: SK= .010]
      [InterEventTime=  12.00]
R0025:C00022------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
 *  CONTINUOUS NASHYD    30.0 01:SW_5A2        20.00     .739 No_date   28:30   39.33 .529     .000
      [CN= 81.0: N= 3.00: Tp=  .62]
      [IaREC= 4.00: SMIN= 25.21: SMAX=168.09: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.61
R0025:C00023------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    30.0 01:SW_5A1      1412.00    7.263 No_date   37:30   34.21 .460     .000
      [CN= 75.0: N= 3.00: Tp= 8.00]
      [IaREC= 4.00: SMIN= 33.81: SMAX=225.43: SK= .010]
      [InterEventTime=  12.00]
R0025:C00024------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    30.0 01:SW_4         585.00   10.733 No_date   29:30   39.33 .529     .000
      [CN= 81.0: N= 3.00: Tp= 1.75]
      [IaREC= 4.00: SMIN= 25.21: SMAX=168.09: SK= .010]
      [InterEventTime=  12.00]
R0025:C00025------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    30.0 01:LM_CK       1021.00   14.279 No_date   30:30   38.57 .519     .000
      [CN= 80.0: N= 3.00: Tp= 2.46]
      [IaREC= 4.00: SMIN= 26.32: SMAX=175.50: SK= .010]
      [InterEventTime=  12.00]
R0025:C00026------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
 *  CONTINUOUS NASHYD    30.0 01:SW_2         177.00    5.280 No_date   28:30   35.63 .479     .000
      [CN= 77.0: N= 3.00: Tp=  .75]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0025:C00027------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    30.0 01:SM_DR       1122.00   13.030 No_date   31:30   39.33 .529     .000
      [CN= 81.0: N= 3.00: Tp= 3.25]
      [IaREC= 4.00: SMIN= 25.21: SMAX=168.09: SK= .010]
      [InterEventTime=  12.00]
R0025:C00028------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    30.0 01:MO_DR       2737.00   28.975 No_date   31:00   34.91 .469     .000
      [CN= 76.0: N= 3.00: Tp= 3.03]
      [IaREC= 4.00: SMIN= 32.46: SMAX=216.39: SK= .010]
      [InterEventTime=  12.00]
R0025:C00029------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    30.0 01:SW_1        3176.00   31.429 No_date   32:00   36.35 .489     .000
      [CN= 78.0: N= 3.00: Tp= 3.56]
      [IaREC= 4.00: SMIN= 29.88: SMAX=199.22: SK= .010]
      [InterEventTime=  12.00]
#
# Routing hydrographs
#
# Starting with the addition of Jock River Headwater and Subwatershed 13
#
R0025:C00030------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              30.0 02:JR_HW       3680.00   15.104 No_date   36:30   25.77  n/a     .000
                     +   30.0 02:SW_13        971.00    5.679 No_date   32:30   24.00  n/a     .000
                  SUM=   30.0 01:S_N13       4651.00   19.326 No_date   35:00   25.40  n/a     .000
#
# Sum of hydrographs from Node 13 routed to Node 13A
# (Approximated cross-section - see cross-section 258)
# Use n=0.04 for summer conditions and n=0.025 for spring conditions
#
R0025:C00031------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->   30.0 02:S_N13       4651.00   19.326 No_date   35:00   25.40  n/a     .000
     [RDT=30.00] out<-   30.0 01:N13A        4651.00   15.622 No_date   39:00   25.40  n/a     .000
      [L/S/n= 9074./ .022/.040]
      {Vmax=  .545:Dmax= 3.628}
#
# Addition of Subwatershed Jock River at Goodwood Marsh to Node 13A
#
R0025:C00032------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              30.0 02:N13A        4651.00   15.622 No_date   39:00   25.40  n/a     .000
                     +   30.0 02:JR_GWM      3074.00    7.216 No_date   39:30   20.63  n/a     .000
                  SUM=   30.0 01:SN13A       7725.00   22.816 No_date   39:30   23.50  n/a     .000
#
# Insertion of a reservoir to simulate the effects of the Goodwood Marsh
#
R0025:C00033------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->   30.0 02:SN13A       7725.00   22.816 No_date   39:30   23.50  n/a     .000
                out <=   30.0 01:RES_GM      7725.00    3.669 No_date   61:00   23.50  n/a     .000
     {MxStoUsed=.1171E+03  m3}
#
R0025:C00034------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD             30.0 01:RES_GM      7725.00    3.669 No_date   61:00   23.50  n/a     .000
      fname :H_RESGM
      remark:Outflow from Res GM
# Output of Reservoir Goodwood Marsh routed from Node 13A to Node 12
# (Approximated cross-section - see cross-section 258)
# Use n=0.04 for summer conditions and n=0.025 for spring conditions
R0025:C00035------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->   30.0 02:RES_GM      7725.00    3.669 No_date   61:00   23.50  n/a     .000
     [RDT=30.00] out<-   30.0 01:N12         7725.00    3.665 No_date   64:00   23.50  n/a     .000
      [L/S/n= 5926./ .076/.040]
      {Vmax=  .552:Dmax= 1.522}
#
# Addition of Subwatershed Jock River at Ashton to Node 12
#
R0025:C00036------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              30.0 02:N12         7725.00    3.665 No_date   64:00   23.50  n/a     .000
                     +   30.0 02:JR_ASH      1781.00   13.927 No_date   32:30   31.47  n/a     .000
                  SUM=   30.0 01:S_N12       9506.00   15.946 No_date   32:30   24.99  n/a     .000
R0025:C00037------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD             30.0 01:S_N12       9506.00   15.946 No_date   32:30   24.99  n/a     .000
      fname :H_SN12
      remark:flow at S_N12 near Ashton
#
# Sum of hydrographs from Node 12 routed to Node 11
# (Approximated cross-section - see cross-section 258)
# Use n=0.04 for summer conditions and n=0.025 for spring conditions
R0025:C00038------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->   30.0 02:S_N12       9506.00   15.946 No_date   32:30   24.99  n/a     .000
     [RDT=30.00] out<-   30.0 01:N11         9506.00   15.700 No_date   33:00   24.99  n/a     .000
      [L/S/n=  972./ .051/.040]
      {Vmax=  .705:Dmax= 2.858}
#
# Sum of hydrographs from Node 12 routed to Node 11 with Dummy section 248
#
R0025:C00039------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->   30.0 02:S_N12       9506.00   15.946 No_date   32:30   24.99  n/a     .000
     [RDT=30.00] out<-   30.0 01:Dum11       9506.00   15.719 No_date   33:00   24.99  n/a     .000
      [L/S/n=  972./ .054/.040]
      {Vmax=  .718:Dmax= 2.831}
#
# Addition of Subwatershed 11 and No Name Creek to Node 11
#
R0025:C00040------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              30.0 02:Dum11       9506.00   15.719 No_date   33:00   24.99  n/a     .000
                     +   30.0 02:SW_11        500.00    7.356 No_date   29:00   26.99  n/a     .000
```

```
                     +    30.0 02:NN_CK       1917.00   10.139 No_date   34:00   26.99  n/a     .000
                  SUM=    30.0 01:S_N11      11923.00   27.440 No_date   33:00   25.40  n/a     .000
#
# Sum of hydrographs from Node 11 routed to Node 10
# Section 1
#
R0025:C00041------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->   30.0 02:S_N11      11923.00   27.440 No_date   33:00   25.40  n/a     .000
     [RDT=30.00] out<-   30.0 01:N10        11923.00   17.756 No_date   40:00   25.40  n/a     .000
      [L/S/n=14028./ .157/.040]
      {Vmax=  .463:Dmax= 1.320}
#
# Addition of Subwatershed 10 to Node 10
#
R0025:C00042------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              30.0 02:N10        11923.00   17.756 No_date   40:00   25.40  n/a     .000
                     +    30.0 02:SW_10      5666.00   26.665 No_date   37:30   31.47  n/a     .000
                  SUM=    30.0 01:S_N10     17589.00   44.045 No_date   38:30   27.35  n/a     .000
R0025:C00043------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD             30.0 01:S_N10      17589.00   44.045 No_date   38:30   27.35  n/a     .000
      fname :H_SN10
      remark:flow at S_N10: N10 + SW_10
# Addition of Kings Creek to S_N10
#
R0025:C00044------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              30.0 02:S_N10      17589.00   44.045 No_date   38:30   27.35  n/a     .000
                     +    30.0 02:KG_CK      8376.00   25.107 No_date   39:30   26.99  n/a     .000
                  SUM=    30.0 01:S_N10A    25965.00   68.824 No_date   39:30   27.24  n/a     .000
#
# Sum of hydrographs from Node 10 routed to Node 9
# Section 2
#
R0025:C00045------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->   30.0 02:S_N10A     25965.00   68.824 No_date   39:30   27.24  n/a     .000
     [RDT=30.00] out<-   30.0 01:N9         25965.00   66.905 No_date   39:30   27.24  n/a     .000
      [L/S/n= 3982./ .075/.040]
      {Vmax=  .713:Dmax= 1.864}
#
# Addition of Subwatershed 9 and Nichols Creek to Node 9
#
R0025:C00046------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              30.0 02:N9         25965.00   66.905 No_date   39:30   27.24  n/a     .000
                     +    30.0 02:SW_9       1132.00   11.574 No_date   30:30   30.15  n/a     .000
                     +    30.0 02:NC_CK      4464.00   12.525 No_date   39:30   24.58  n/a     .000
                  SUM=    30.0 01:S_N9      31561.00   82.190 No_date   39:30   26.97  n/a     .000
#
# Sum of hydrographs from Node 9 routed to Node 8
# Section 3
#
R0025:C00047------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->   30.0 02:S_N9       31561.00   82.190 No_date   39:30   26.97  n/a     .000
     [RDT=30.00] out<-   30.0 01:N8         31561.00   77.115 No_date   40:00   26.97  n/a     .000
      [L/S/n= 2269./ .088/.045]
      {Vmax=  .362:Dmax= 1.727}
#
# Addition of Subwatershed 8 and Hobb's Drain to Node 8
#
R0025:C00048------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              30.0 02:N8         31561.00   77.115 No_date   40:00   26.97  n/a     .000
                     +    30.0 02:SW_8        131.00    2.156 No_date   28:30   25.17  n/a     .000
                     +    30.0 02:HB_DR      3854.00   14.880 No_date   38:30   26.99  n/a     .000
                  SUM=    30.0 01:S_N8      35546.00   91.271 No_date   39:30   26.96  n/a     .000
#
# Sum of hydrographs from Node 8 routed to Node 7
# Section 4
#
R0025:C00049------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->   30.0 02:S_N8       35546.00   91.271 No_date   39:30   26.96  n/a     .000
     [RDT=30.00] out<-   30.0 01:N7         35546.00   78.196 No_date   45:00   26.96  n/a     .000
      [L/S/n= 3750./ .053/.070]
      {Vmax=  .225:Dmax= 2.134}
#
# Addition of Subwatershed 7 to Node 7
#
R0025:C00050------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              30.0 02:N7         35546.00   78.196 No_date   45:00   26.96  n/a     .000
                     +    30.0 02:SW_7       3197.00   11.391 No_date   36:00   21.73  n/a     .000
                  SUM=    30.0 01:S_N7      38743.00   84.011 No_date   44:00   26.53  n/a     .000
R0025:C00051------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD             30.0 01:S_N7       38743.00   84.011 No_date   44:00   26.53  n/a     .000
      fname :H_SN7
      remark:flow at S_N7: N7 + SW_7
# Insertion of a reservoir to simulate the effects of the Richmond Fen.
# Storage area and volumes were estimated from available topo maps.
# Release rate from fen was assumed to be controlled by the downstream
# river cross-section for summer conditions.  It is was assumed that for up to
# 0.75 m of water, the main channel of the river provided the storage.  Above
# this depth, the wetland starts to signigicantly store water.
#
R0025:C00052------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->   30.0 02:S_N7       38743.00   84.011 No_date   44:00   26.53  n/a     .000
                out <=   30.0 01:RES_RF     38743.00   40.725 No_date   60:30   26.53  n/a     .000
     {MxStoUsed=.3577E+03  m3}
R0025:C00053------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD             30.0 01:RES_RF     38743.00   40.725 No_date   60:30   26.53  n/a     .000
      fname :H_ResRF
      remark:outflow of Richmond Fen
#
# Sum of hydrographs from Node 7 routed to Node 6
# Section 5
#
R0025:C00054------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->   30.0 02:RES_RF     38743.00   40.725 No_date   60:30   26.53  n/a     .000
     [RDT=30.00] out<-   30.0 01:N6         38743.00   40.549 No_date   61:30   26.53  n/a     .000
      [L/S/n= 3056./ .082/.025]
      {Vmax=  .510:Dmax= 1.101}
#
# Addition of Subwatershed 6 and Van Gaal Drain to Node 6
#
R0025:C00055------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              30.0 02:N6         38743.00   40.549 No_date   61:30   26.53  n/a     .000
                     +    30.0 02:SW_6        165.00    1.056 No_date   33:00   27.61  n/a     .000
                     +    30.0 02:VG_DR      1332.00    7.707 No_date   35:00   31.47  n/a     .000
                  SUM=    30.0 01:S_N6      40240.01   40.613 No_date   61:30   26.70  n/a     .000
#
# Sum of hydrographs from Node 6 routed to Node 5
# Section 6
#
R0025:C00056------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->   30.0 02:S_N6       40240.01   40.613 No_date   61:30   26.70  n/a     .000
     [RDT=30.00] out<-   30.0 01:N5         40240.01   40.523 No_date   62:30   26.70  n/a     .000
      [L/S/n= 1852./ .054/.035]
      {Vmax=  .440:Dmax= 1.203}
#
# Addition of Subwatershed 5 and Flowing Creek to Node 5
#
R0025:C00057------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              30.0 02:N5         40240.01   40.523 No_date   62:30   26.70  n/a     .000
                     +    30.0 02:SW_5        224.00    6.682 No_date   28:30   35.63  n/a     .000
                     +    30.0 02:FL_CK      4945.00   36.990 No_date   33:00   32.82  n/a     .000
                  SUM=    30.0 01:S_N5      45409.01   61.906 No_date   34:00   27.41  n/a     .000
#
# Sum of hydrographs from Node 5 routed to Node 5A
# Section 7
#
R0025:C00058------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->   30.0 02:S_N5       45409.01   61.906 No_date   34:00   27.41  n/a     .000
     [RDT=30.00] out<-   30.0 01:N5A        45409.01   61.890 No_date   34:30   27.41  n/a     .000
      [L/S/n=  556./ .090/.040]
      {Vmax=  .510:Dmax= 1.217}
#
# Addition of Subwatershed 5A1 and Subwatershed 5A2 to Node 5A
#
R0025:C00059------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              30.0 02:N5A        45409.01   61.890 No_date   34:30   27.41  n/a     .000
                     +    30.0 02:SW_5A2       20.00     .739 No_date   28:30   39.33  n/a     .000
                     +    30.0 02:SW_5A1     1412.00    7.263 No_date   37:30   34.21  n/a     .000
                  SUM=    30.0 01:S_N5A     46841.01   68.494 No_date   34:30   27.62  n/a     .000
#
# Sum of hydrographs from Node 5A routed to Node 4
# Section 8
#
R0025:C00060------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->   30.0 02:S_N5A      46841.01   68.494 No_date   34:30   27.62  n/a     .000
     [RDT=30.00] out<-   30.0 01:N4         46841.01   65.794 No_date   36:30   27.62  n/a     .000
      [L/S/n= 4630./ .043/.035]
      {Vmax=  .838:Dmax= 3.516}
#
# Addition of Subwatershed 4 and Leamy Creek to Node 4
#
R0025:C00061------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              30.0 02:N4         46841.01   65.794 No_date   36:30   27.62  n/a     .000
                     +    30.0 02:SW_4        585.00   10.733 No_date   29:30   39.33  n/a     .000
                     +    30.0 02:LM_CK      1021.00   14.279 No_date   30:30   38.57  n/a     .000
                  SUM=    30.0 01:S_N4      48447.00   73.162 No_date   35:30   27.99  n/a     .000
R0025:C00062------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD             30.0 01:S_N4       48447.00   73.162 No_date   35:30   27.99  n/a     .000
      fname :S_N4.0025
      remark:flow at S_N4
#
# Sum of hydrographs from Node 4 routed to Node 2
# Section 9
#
R0025:C00063------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->   30.0 02:S_N4       48447.00   73.162 No_date   35:30   27.99  n/a     .000
     [RDT=30.00] out<-   30.0 01:N2         48447.00   72.927 No_date   35:30   27.99  n/a     .000
      [L/S/n= 1667./ .060/.040]
      {Vmax=  .871:Dmax= 3.558}
#
# Addition of Subwatershed 2 with Monohan Drain and Smith Drain to Node 2
#
R0025:C00064------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              30.0 02:N2         48447.00   72.927 No_date   35:30   27.99  n/a     .000
                     +    30.0 02:SW_2        177.00    5.280 No_date   28:30   35.63  n/a     .000
                     +    30.0 02:SM_DR      1122.00   13.030 No_date   31:30   39.33  n/a     .000
                     +    30.0 02:MO_DR      2737.00   28.975 No_date   31:00   34.91  n/a     .000
                  SUM=    30.0 01:S_N2      52483.00  104.643 No_date   33:00   28.62  n/a     .000
R0025:C00065------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD             30.0 01:S_N2       52483.00  104.643 No_date   33:00   28.62  n/a     .000
      fname :H_SN2
      remark:flow at S_N2 Jock River Gauge at Moodie Dr.
#
# Sum of hydrographs from Node 2 routed to Node 1
# Section 10
#
R0025:C00066------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->   30.0 02:S_N2       52483.00  104.643 No_date   33:00   28.62  n/a     .000
     [RDT=30.00] out<-   30.0 01:N1         52483.00   92.450 No_date   36:00   28.62  n/a     .000
      [L/S/n=10046./ .050/.040]
      {Vmax=  .998:Dmax= 3.955}
#
# Addition of Subwatershed 1 to Node 1
#
R0025:C00067------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              30.0 02:N1         52483.00   92.450 No_date   36:00   28.62  n/a     .000
                     +    30.0 02:SW_1       3176.00   31.429 No_date   32:00   36.35  n/a     .000
                  SUM=    30.0 01:N1        55659.00  115.838 No_date   34:30   29.06  n/a     .000
R0025:C00068------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD             30.0 01:N1         55659.00  115.838 No_date   34:30   29.06  n/a     .000
      fname :N1.0025
      remark:total outflow of Jock River
################################################################################
  ** END OF RUN :   49

*****************************************************************************************************

 RUN#:COMMAND#
R0050:C00001-----------------------------------------------------------------------------------------
     START
      [TZERO =    .00 hrs on        0]
      [METOUT=   2    (1=imperial, 2=metric output)]
      [NSTORM=   1 ]
      [NRUN  = 0050 ]
#******************************************************************************
#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
#******************************************************************************
#  Project Name: [Jock River]    Project Number: [411-02]
#  Date        : 06-06-2003
#  Modeller    : [JoF]
#  Company     : JFSAinc.
#  License #   :  2549237
#******************************************************************************
# CALIBRATION OF SUMMER MODEL PARAMETERS
# USING CONTINUOUS SIMULATIONS
# Rainfall data from JFSA raingauge installed at site + other gauges by the City
# Use data collected from May 1st to July 14, 2003
# ----------------------------------------------------------------------------
R0050:C00002-----------------------------------------------------------------------------------------
     READ STORM
      Filename = storm.001
      Comment  = Pluie SCS de 24 hres 1:50 ans pour Ottawa CDA
      [SDT=10.00:SDUR=  24.00:PTOT=  81.51]
R0050:C00003-----------------------------------------------------------------------------------------
     MODIFY STORM
      [RFACT=  1.00:TSHIFT= 960.00 min]
      [SDT=10.00:SDUR=  40.00:PTOT=  81.51]
R0050:C00004-----------------------------------------------------------------------------------------
     COMPUTE API
      [APIini= 50.00: APIkdy= .8500: APIkdt= .9989]
      {APImax=113.33: APIavg= 67.14: APImin= 44.87}
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.32
R0050:C00005------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    30.0 01:JR_HW       3680.00   17.963 No_date   36:30   30.30 .372     .000
      [CN= 64.0: N= 3.00: Tp= 7.13]
      [IaREC= 4.00: SMIN= 57.05: SMAX=380.32: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.32
R0050:C00006------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    30.0 01:SW_13        971.00    6.816 No_date   32:30   28.25 .347     .000
      [CN= 61.0: N= 3.00: Tp= 3.76]
      [IaREC= 4.00: SMIN= 64.50: SMAX=430.01: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.80
R0050:C00007------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    30.0 01:JR_GWM      3074.00    8.540 No_date   39:30   24.29 .298     .000
      [CN= 55.0: N= 3.00: Tp=11.33]
      [IaREC= 4.00: SMIN= 83.24: SMAX=554.96: SK= .010]
      [InterEventTime=  12.00]
R0050:C00008------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    30.0 01:JR_ASH      1781.00   16.547 No_date   32:30   36.82 .452     .000
      [CN= 72.0: N= 3.00: Tp= 3.91]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
R0050:C00009------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    30.0 01:SW_11        500.00    8.861 No_date   29:00   31.71 .389     .000
      [CN= 66.0: N= 3.00: Tp= 1.24]
      [IaREC= 4.00: SMIN= 52.62: SMAX=350.79: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.80
R0050:C00010------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    30.0 01:NN_CK       1917.00   12.088 No_date   34:00   31.71 .389     .000
      [CN= 66.0: N= 3.00: Tp= 5.29]
      [IaREC= 4.00: SMIN= 52.62: SMAX=350.79: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.52
R0050:C00011------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    30.0 01:SW_10       5666.00   31.459 No_date   37:30   36.82 .452     .000
      [CN= 72.0: N= 3.00: Tp= 8.00]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.75
R0050:C00012------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    30.0 01:KG_CK       8376.00   29.616 No_date   39:30   31.71 .389     .000
      [CN= 66.0: N= 3.00: Tp=11.66]
      [IaREC= 4.00: SMIN= 52.62: SMAX=350.79: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.68
R0050:C00013------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    30.0 01:SW_9        1132.00   13.828 No_date   30:30   35.33 .433     .000
      [CN= 70.0: N= 3.00: Tp= 2.51]
      [IaREC= 4.00: SMIN= 43.07: SMAX=287.10: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.82
R0050:C00014------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    30.0 01:NC_CK       4464.00   14.806 No_date   39:30   28.93 .355     .000
      [CN= 62.0: N= 3.00: Tp=11.32]
      [IaREC= 4.00: SMIN= 61.90: SMAX=412.66: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.80
R0050:C00015------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
 *  CONTINUOUS NASHYD    30.0 01:SW_8         131.00    2.605 No_date   28:30   29.61 .363     .000
      [CN= 63.0: N= 3.00: Tp=  .90]
      [IaREC= 4.00: SMIN= 59.42: SMAX=396.11: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.65
R0050:C00016------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    30.0 01:HB_DR       3854.00   17.631 No_date   38:30   31.71 .389     .000
      [CN= 66.0: N= 3.00: Tp= 8.42]
      [IaREC= 4.00: SMIN= 52.62: SMAX=350.79: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.82
R0050:C00017------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    30.0 01:SW_7        3197.00   13.606 No_date   36:00   25.59 .314     .000
      [CN= 57.0: N= 3.00: Tp= 6.65]
      [IaREC= 4.00: SMIN= 76.32: SMAX=508.81: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.75
R0050:C00018------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    30.0 01:SW_6         165.00    1.261 No_date   33:00   32.42 .398     .000
      [CN= 67.0: N= 3.00: Tp= 4.18]
      [IaREC= 4.00: SMIN= 50.55: SMAX=336.97: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.67
R0050:C00019------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    30.0 01:VG_DR       1332.00    9.122 No_date   35:00   36.82 .452     .000
      [CN= 72.0: N= 3.00: Tp= 5.95]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
R0050:C00020------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
 *  CONTINUOUS NASHYD    30.0 01:SW_5         224.00    7.947 No_date   28:30   41.48 .509     .000
      [CN= 77.0: N= 3.00: Tp=  .75]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
#
```

```
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.20
R0050:C00021-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    30.0 01:FL_CK       4945.00   43.824 No_date   33:00   38.35 .470     .000
      [CN= 74.0: N= 3.00: Tp= 4.45]
      [IaREC= 4.00: SMIN= 36.67: SMAX=244.49: SK= .010]
      [InterEventTime=  12.00]
R0050:C00022-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
 *  CONTINUOUS NASHYD    30.0 01:SW_5A2        20.00     .873 No_date   28:30   45.57 .559     .000
      [CN= 81.0: N= 3.00: Tp=  .62]
      [IaREC= 4.00: SMIN= 25.21: SMAX=168.09: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.61
R0050:C00023-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    30.0 01:SW_5A1      1412.00    8.537 No_date   37:30   39.90 .490     .000
      [CN= 75.0: N= 3.00: Tp= 8.00]
      [IaREC= 4.00: SMIN= 33.81: SMAX=225.43: SK= .010]
      [InterEventTime=  12.00]
R0050:C00024-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    30.0 01:SW_4         585.00   12.656 No_date   29:30   45.57 .559     .000
      [CN= 81.0: N= 3.00: Tp= 1.75]
      [IaREC= 4.00: SMIN= 25.21: SMAX=168.09: SK= .010]
      [InterEventTime=  12.00]
R0050:C00025-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    30.0 01:LM_CK       1021.00   16.828 No_date   30:30   44.74 .549     .000
      [CN= 80.0: N= 3.00: Tp= 2.46]
      [IaREC= 4.00: SMIN= 26.32: SMAX=175.50: SK= .010]
      [InterEventTime=  12.00]
R0050:C00026-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
 *  CONTINUOUS NASHYD    30.0 01:SW_2         177.00    6.279 No_date   28:30   41.48 .509     .000
      [CN= 77.0: N= 3.00: Tp=  .75]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0050:C00027-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    30.0 01:SM_DR       1122.00   15.311 No_date   31:30   45.57 .559     .000
      [CN= 81.0: N= 3.00: Tp= 3.25]
      [IaREC= 4.00: SMIN= 25.21: SMAX=168.09: SK= .010]
      [InterEventTime=  12.00]
R0050:C00028-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    30.0 01:MO_DR       2737.00   34.329 No_date   31:00   40.69 .499     .000
      [CN= 76.0: N= 3.00: Tp= 3.03]
      [IaREC= 4.00: SMIN= 32.46: SMAX=216.39: SK= .010]
      [InterEventTime=  12.00]
R0050:C00029-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    30.0 01:SW_1        3176.00   37.086 No_date   32:00   42.28 .519     .000
      [CN= 78.0: N= 3.00: Tp= 3.56]
      [IaREC= 4.00: SMIN= 29.88: SMAX=199.22: SK= .010]
      [InterEventTime=  12.00]
#
# Routing hydrographs
#
# Starting with the addition of Jock River Headwater and Subwatershed 13
#
R0050:C00030-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              30.0 02:JR_HW       3680.00   17.963 No_date   36:30   30.30  n/a     .000
                   +     30.0 02:SW_13        971.00    6.816 No_date   32:30   28.25  n/a     .000
                SUM=     30.0 01:S_N13       4651.00   23.017 No_date   35:00   29.87  n/a     .000
#
# Sum of hydrographs from Node 13 routed to Node 13A
# (Approximated cross-section - see cross-section 258)
# Use n=0.04 for summer conditions and n=0.025 for spring conditions
#
R0050:C00031-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->   30.0 02:S_N13       4651.00   23.017 No_date   35:00   29.87  n/a     .000
     [RDT=30.00] out<-   30.0 01:N13A        4651.00   18.758 No_date   38:30   29.87  n/a     .000
      [L/S/n= 9074./ .022/.040]
      {Vmax=  .571:Dmax= 3.883}
#
# Addition of Subwatershed Jock River at Goodwood Marsh to Node 13A
#
R0050:C00032-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              30.0 02:N13A        4651.00   18.758 No_date   38:30   29.87  n/a     .000
                   +     30.0 02:JR_GWM      3074.00    8.540 No_date   39:30   24.29  n/a     .000
                SUM=     30.0 01:SN13A       7725.00   27.242 No_date   39:30   27.65  n/a     .000
#
# Insertion of a reservoir to simulate the effects of the Goodwood Marsh
#
R0050:C00033-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->   30.0 02:SN13A       7725.00   27.242 No_date   39:30   27.65  n/a     .000
                out <=   30.0 01:RES_GM      7725.00    3.797 No_date   62:30   27.65  n/a     .000
     {MxStoUsed=.1456E+03  m3}
#
R0050:C00034-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD             30.0 01:RES_GM      7725.00    3.797 No_date   62:30   27.65  n/a     .000
      fname :H_RESGM
      remark:Outflow from Res GM
# Output of Reservoir Goodwood Marsh routed from Node 13A to Node 12
# (Approximated cross-section - see cross-section 258)
# Use n=0.04 for summer conditions and n=0.025 for spring conditions
R0050:C00035-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->   30.0 02:RES_GM      7725.00    3.797 No_date   62:30   27.65  n/a     .000
     [RDT=30.00] out<-   30.0 01:N12         7725.00    3.794 No_date   65:00   27.65  n/a     .000
      [L/S/n= 5926./ .076/.040]
      {Vmax=  .556:Dmax= 1.539}
#
# Addition of Subwatershed Jock River at Ashton to Node 12
#
R0050:C00036-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              30.0 02:N12         7725.00    3.794 No_date   65:00   27.65  n/a     .000
                   +     30.0 02:JR_ASH      1781.00   16.547 No_date   32:30   36.82  n/a     .000
                SUM=     30.0 01:S_N12       9506.00   18.583 No_date   32:30   29.37  n/a     .000
R0050:C00037-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD             30.0 01:S_N12       9506.00   18.583 No_date   32:30   29.37  n/a     .000
      fname :H_SN12
      remark:flow at S_N12 near Ashton
#
# Sum of hydrographs from Node 12 routed to Node 11
# (Approximated cross-section - see cross-section 258)
# Use n=0.04 for summer conditions and n=0.025 for spring conditions
R0050:C00038-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->   30.0 02:S_N12       9506.00   18.583 No_date   32:30   29.37  n/a     .000
     [RDT=30.00] out<-   30.0 01:N11         9506.00   18.279 No_date   32:30   29.37  n/a     .000
      [L/S/n=  972./ .051/.040]
      {Vmax=  .734:Dmax= 3.040}
#
# Sum of hydrographs from Node 12 routed to Node 11 with Dummy section 248
#
R0050:C00039-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->   30.0 02:S_N12       9506.00   18.583 No_date   32:30   29.37  n/a     .000
     [RDT=30.00] out<-   30.0 01:Dum11       9506.00   18.314 No_date   32:30   29.37  n/a     .000
      [L/S/n=  972./ .054/.040]
      {Vmax=  .748:Dmax= 3.010}
#
# Addition of Subwatershed 11 and No Name Creek to Node 11
#
R0050:C00040-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              30.0 02:Dum11       9506.00   18.314 No_date   32:30   29.37  n/a     .000
                   +     30.0 02:SW_11        500.00    8.861 No_date   29:00   31.71  n/a     .000
                   +     30.0 02:NN_CK       1917.00   12.088 No_date   34:00   31.71  n/a     .000
                SUM=     30.0 01:S_N11      11923.00   32.241 No_date   33:00   29.84  n/a     .000
#
# Sum of hydrographs from Node 11 routed to Node 10
# Section 1
#
R0050:C00041-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->   30.0 02:S_N11      11923.00   32.241 No_date   33:00   29.84  n/a     .000
     [RDT=30.00] out<-   30.0 01:N10        11923.00   20.165 No_date   40:00   29.84  n/a     .000
      [L/S/n=14028./ .157/.040]
      {Vmax=  .473:Dmax= 1.413}
#
# Addition of Subwatershed 10 to Node 10
#
R0050:C00042-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              30.0 02:N10        11923.00   20.165 No_date   40:00   29.84  n/a     .000
                   +     30.0 02:SW_10       5666.00   31.459 No_date   37:30   36.82  n/a     .000
                SUM=     30.0 01:S_N10      17589.00   51.443 No_date   38:00   32.09  n/a     .000
R0050:C00043-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD             30.0 01:S_N10      17589.00   51.443 No_date   38:00   32.09  n/a     .000
      fname :H_SN10
      remark:flow at S_N10: N10 + SW_10
# Addition of Kings Creek to S_N10
#
R0050:C00044-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              30.0 02:S_N10      17589.00   51.443 No_date   38:00   32.09  n/a     .000
                   +     30.0 02:KG_CK       8376.00   29.616 No_date   39:30   31.71  n/a     .000
                SUM=     30.0 01:S_N10A     25965.00   80.385 No_date   39:30   31.97  n/a     .000
#
# Sum of hydrographs from Node 10 routed to Node 9
# Section 2
#
R0050:C00045-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->   30.0 02:S_N10A     25965.00   80.385 No_date   39:30   31.97  n/a     .000
     [RDT=30.00] out<-   30.0 01:N9         25965.00   78.483 No_date   39:30   31.97  n/a     .000
      [L/S/n= 3982./ .075/.040]
      {Vmax=  .739:Dmax= 1.990}
#
# Addition of Subwatershed 9 and Nichols Creek to Node 9
#
R0050:C00046-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              30.0 02:N9         25965.00   78.483 No_date   39:30   31.97  n/a     .000
                   +     30.0 02:SW_9        1132.00   13.828 No_date   30:30   35.33  n/a     .000
                   +     30.0 02:NC_CK       4464.00   14.806 No_date   39:30   28.93  n/a     .000
                SUM=     30.0 01:S_N9       31561.00   96.483 No_date   39:30   31.66  n/a     .000
#
# Sum of hydrographs from Node 9 routed to Node 8
# Section 3
#
R0050:C00047-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->   30.0 02:S_N9       31561.00   96.483 No_date   39:30   31.66  n/a     .000
     [RDT=30.00] out<-   30.0 01:N8         31561.00   91.152 No_date   40:00   31.66  n/a     .000
      [L/S/n= 2269./ .088/.045]
      {Vmax=  .367:Dmax= 1.816}
#
# Addition of Subwatershed 8 and Hobb's Drain to Node 8
#
R0050:C00048-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              30.0 02:N8         31561.00   91.152 No_date   40:00   31.66  n/a     .000
                   +     30.0 02:SW_8         131.00    2.605 No_date   28:30   29.61  n/a     .000
                   +     30.0 02:HB_DR       3854.00   17.631 No_date   38:30   31.71  n/a     .000
                SUM=     30.0 01:S_N8       35546.00  108.049 No_date   39:30   31.66  n/a     .000
#
# Sum of hydrographs from Node 8 routed to Node 7
# Section 4
#
R0050:C00049-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->   30.0 02:S_N8       35546.00  108.049 No_date   39:30   31.66  n/a     .000
     [RDT=30.00] out<-   30.0 01:N7         35546.00   92.806 No_date   44:30   31.66  n/a     .000
      [L/S/n= 3750./ .053/.070]
      {Vmax=  .230:Dmax= 2.266}
#
# Addition of Subwatershed 7 to Node 7
#
R0050:C00050-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              30.0 02:N7         35546.00   92.806 No_date   44:30   31.66  n/a     .000
                   +     30.0 02:SW_7        3197.00   13.606 No_date   36:00   25.59  n/a     .000
                SUM=     30.0 01:S_N7       38743.00  100.010 No_date   43:30   31.16  n/a     .000
R0050:C00051-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD             30.0 01:S_N7       38743.00  100.010 No_date   43:30   31.16  n/a     .000
      fname :H_SN7
      remark:flow at S_N7: N7 + SW_7
# Insertion of a reservoir to simulate the effects of the Richmond Fen.
# Storage area and volumes were estimated from available topo maps.
# Release rate from fen was assumed to be controlled by the downstream
# river cross-section for summer conditions.  It is was assumed that for up to
# 0.75 m of water, the main channel of the river provided the storage.  Above
# this depth, the wetland starts to signigicantly store water.
#
R0050:C00052-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->   30.0 02:S_N7       38743.00  100.010 No_date   43:30   31.16  n/a     .000
                out <=   30.0 01:RES_RF     38743.00   50.512 No_date   59:00   31.16  n/a     .000
     {MxStoUsed=.4285E+03  m3}
R0050:C00053-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD             30.0 01:RES_RF     38743.00   50.512 No_date   59:00   31.16  n/a     .000
      fname :H_ResRF
      remark:outflow of Richmond Fen
#
# Sum of hydrographs from Node 7 routed to Node 6
# Section 5
#
R0050:C00054-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->   30.0 02:RES_RF     38743.00   50.512 No_date   59:00   31.16  n/a     .000
     [RDT=30.00] out<-   30.0 01:N6         38743.00   50.296 No_date   60:30   31.16  n/a     .000
      [L/S/n= 3056./ .082/.025]
      {Vmax=  .534:Dmax= 1.234}
#
# Addition of Subwatershed 6 and Van Gaal Drain to Node 6
#
R0050:C00055-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              30.0 02:N6         38743.00   50.296 No_date   60:30   31.16  n/a     .000
                   +     30.0 02:SW_6         165.00    1.261 No_date   33:00   32.42  n/a     .000
                   +     30.0 02:VG_DR       1332.00    9.122 No_date   35:00   36.82  n/a     .000
                SUM=     30.0 01:S_N6       40240.01   50.407 No_date   60:30   31.35  n/a     .000
#
# Sum of hydrographs from Node 6 routed to Node 5
# Section 6
#
R0050:C00056-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->   30.0 02:S_N6       40240.01   50.407 No_date   60:30   31.35  n/a     .000
     [RDT=30.00] out<-   30.0 01:N5         40240.01   50.300 No_date   61:00   31.35  n/a     .000
      [L/S/n= 1852./ .054/.035]
      {Vmax=  .466:Dmax= 1.333}
#
# Addition of Subwatershed 5 and Flowing Creek to Node 5
#
R0050:C00057-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              30.0 02:N5         40240.01   50.300 No_date   61:00   31.35  n/a     .000
                   +     30.0 02:SW_5         224.00    7.947 No_date   28:30   41.48  n/a     .000
                   +     30.0 02:FL_CK       4945.00   43.824 No_date   33:00   38.35  n/a     .000
                SUM=     30.0 01:S_N5       45409.01   70.670 No_date   34:00   32.16  n/a     .000
#
# Sum of hydrographs from Node 5 routed to Node 5A
# Section 7
#
R0050:C00058-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->   30.0 02:S_N5       45409.01   70.670 No_date   34:00   32.16  n/a     .000
     [RDT=30.00] out<-   30.0 01:N5A        45409.01   70.588 No_date   34:30   32.16  n/a     .000
      [L/S/n=  556./ .090/.040]
      {Vmax=  .528:Dmax= 1.284}
#
# Addition of Subwatershed 5A1 and Subwatershed 5A2 to Node 5A
#
R0050:C00059-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              30.0 02:N5A        45409.01   70.588 No_date   34:30   32.16  n/a     .000
                   +     30.0 02:SW_5A2        20.00     .873 No_date   28:30   45.57  n/a     .000
                   +     30.0 02:SW_5A1      1412.00    8.537 No_date   37:30   39.90  n/a     .000
                SUM=     30.0 01:S_N5A      46841.01   78.358 No_date   34:30   32.40  n/a     .000
#
# Sum of hydrographs from Node 5A routed to Node 4
# Section 8
#
R0050:C00060-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->   30.0 02:S_N5A      46841.01   78.358 No_date   34:30   32.40  n/a     .000
     [RDT=30.00] out<-   30.0 01:N4         46841.01   75.078 No_date   36:00   32.40  n/a     .000
      [L/S/n= 4630./ .043/.035]
      {Vmax=  .871:Dmax= 3.687}
#
# Addition of Subwatershed 4 and Leamy Creek to Node 4
#
R0050:C00061-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              30.0 02:N4         46841.01   75.078 No_date   36:00   32.40  n/a     .000
                   +     30.0 02:SW_4         585.00   12.656 No_date   29:30   45.57  n/a     .000
                   +     30.0 02:LM_CK       1021.00   16.828 No_date   30:30   44.74  n/a     .000
                SUM=     30.0 01:S_N4       48447.00   84.137 No_date   35:00   32.82  n/a     .000
R0050:C00062-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD             30.0 01:S_N4       48447.00   84.137 No_date   35:00   32.82  n/a     .000
      fname :S_N4.0050
      remark:flow at S_N4
#
# Sum of hydrographs from Node 4 routed to Node 2
# Section 9
#
R0050:C00063-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->   30.0 02:S_N4       48447.00   84.137 No_date   35:00   32.82  n/a     .000
     [RDT=30.00] out<-   30.0 01:N2         48447.00   83.911 No_date   35:30   32.82  n/a     .000
      [L/S/n= 1667./ .060/.040]
      {Vmax=  .907:Dmax= 3.737}
#
# Addition of Subwatershed 2 with Monohan Drain and Smith Drain to Node 2
#
R0050:C00064-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              30.0 02:N2         48447.00   83.911 No_date   35:30   32.82  n/a     .000
                   +     30.0 02:SW_2         177.00    6.279 No_date   28:30   41.48  n/a     .000
                   +     30.0 02:SM_DR       1122.00   15.311 No_date   31:30   45.57  n/a     .000
                   +     30.0 02:MO_DR       2737.00   34.329 No_date   31:00   40.69  n/a     .000
                SUM=     30.0 01:S_N2       52483.00  122.469 No_date   33:00   33.53  n/a     .000
R0050:C00065-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD             30.0 01:S_N2       52483.00  122.469 No_date   33:00   33.53  n/a     .000
      fname :H_SN2
      remark:flow at S_N2 Jock River Gauge at Moodie Dr.
#
# Sum of hydrographs from Node 2 routed to Node 1
# Section 10
#
R0050:C00066-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->   30.0 02:S_N2       52483.00  122.469 No_date   33:00   33.53  n/a     .000
     [RDT=30.00] out<-   30.0 01:N1         52483.00  107.946 No_date   35:30   33.53  n/a     .000
      [L/S/n=10046./ .050/.040]
      {Vmax= 1.047:Dmax= 4.256}
#
# Addition of Subwatershed 1 to Node 1
#
R0050:C00067-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              30.0 02:N1         52483.00  107.946 No_date   35:30   33.53  n/a     .000
                   +     30.0 02:SW_1        3176.00   37.086 No_date   32:00   42.28  n/a     .000
                SUM=     30.0 01:N1         55659.00  136.459 No_date   34:00   34.03  n/a     .000
R0050:C00068-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD             30.0 01:N1         55659.00  136.459 No_date   34:00   34.03  n/a     .000
      fname :N1.0050
      remark:total outflow of Jock River
##############################################################################
  ** END OF RUN :   99

*******************************************************************************************

 RUN#:COMMAND#
R0100:C00001-------------------------------------------------------------------------------
     START
      [TZERO =    .00 hrs on        0]
      [METOUT=   2    (1=imperial, 2=metric output)]
      [NSTORM=   1 ]
      [NRUN  = 0100 ]
#***************************************************************************
#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
#***************************************************************************
#  Project Name: [Jock River]    Project Number: [411-02]
#  Date        : 06-06-2003
#  Modeller    : [JoF]
#  Company     : JFSAinc.
#  License #   :  2549237
#***************************************************************************
# CALIBRATION OF SUMMER MODEL PARAMETERS
# USING CONTINUOUS SIMULATIONS
# Rainfall data from JFSA raingauge installed at site + other gauges by the City
# Use data collected from May 1st to July 14, 2003
# --------------------------------------------------------------------------
R0100:C00002-------------------------------------------------------------------------------
     READ STORM
      Filename = storm.001
```

```
      Comment  = Pluie SCS de 24 hres 1:100 ans pour Ottawa CDA
      [SDT=10.00:SDUR=  24.00:PTOT=  88.57]
R0100:C00003-----------------------------------------------------------------------------------------
     MODIFY STORM
      [RFACT=  1.00:TSHIFT= 960.00 min]
      [SDT=10.00:SDUR=  40.00:PTOT=  88.57]
R0100:C00004-----------------------------------------------------------------------------------------
     COMPUTE API
      [APIini= 50.00: APIkdy= .8500: APIkdt= .9989]
      {APImax=119.84: APIavg= 69.19: APImin= 44.87}
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.32
R0100:C00005------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    30.0 01:JR_HW       3680.00   21.054 No_date   36:30   35.15 .397     .000
      [CN= 64.0: N= 3.00: Tp= 7.13]
      [IaREC= 4.00: SMIN= 57.05: SMAX=380.32: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.32
R0100:C00006------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    30.0 01:SW_13        971.00    8.058 No_date   32:30   32.81 .370     .000
      [CN= 61.0: N= 3.00: Tp= 3.76]
      [IaREC= 4.00: SMIN= 64.50: SMAX=430.01: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.80
R0100:C00007------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    30.0 01:JR_GWM      3074.00    9.983 No_date   39:30   28.27 .319     .000
      [CN= 55.0: N= 3.00: Tp=11.33]
      [IaREC= 4.00: SMIN= 83.24: SMAX=554.96: SK= .010]
      [InterEventTime=  12.00]
R0100:C00008------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    30.0 01:JR_ASH      1781.00   19.356 No_date   32:30   42.46 .479     .000
      [CN= 72.0: N= 3.00: Tp= 3.91]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
R0100:C00009------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    30.0 01:SW_11        500.00   10.499 No_date   29:00   36.74 .415     .000
      [CN= 66.0: N= 3.00: Tp= 1.24]
      [IaREC= 4.00: SMIN= 52.62: SMAX=350.79: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.80
R0100:C00010------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    30.0 01:NN_CK       1917.00   14.197 No_date   34:00   36.74 .415     .000
      [CN= 66.0: N= 3.00: Tp= 5.29]
      [IaREC= 4.00: SMIN= 52.62: SMAX=350.79: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.52
R0100:C00011------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    30.0 01:SW_10       5666.00   36.560 No_date   37:30   42.46 .479     .000
      [CN= 72.0: N= 3.00: Tp= 8.00]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.75
R0100:C00012------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    30.0 01:KG_CK       8376.00   34.456 No_date   39:30   36.74 .415     .000
      [CN= 66.0: N= 3.00: Tp=11.66]
      [IaREC= 4.00: SMIN= 52.62: SMAX=350.79: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.68
R0100:C00013------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    30.0 01:SW_9        1132.00   16.257 No_date   30:30   40.80 .461     .000
      [CN= 70.0: N= 3.00: Tp= 2.51]
      [IaREC= 4.00: SMIN= 43.07: SMAX=287.10: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.82
R0100:C00014------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    30.0 01:NC_CK       4464.00   17.270 No_date   39:30   33.59 .379     .000
      [CN= 62.0: N= 3.00: Tp=11.32]
      [IaREC= 4.00: SMIN= 61.90: SMAX=412.66: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.80
R0100:C00015------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
 *  CONTINUOUS NASHYD    30.0 01:SW_8         131.00    3.096 No_date   28:30   34.37 .388     .000
      [CN= 63.0: N= 3.00: Tp=  .90]
      [IaREC= 4.00: SMIN= 59.42: SMAX=396.11: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.65
R0100:C00016------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    30.0 01:HB_DR       3854.00   20.590 No_date   38:00   36.74 .415     .000
      [CN= 66.0: N= 3.00: Tp= 8.42]
      [IaREC= 4.00: SMIN= 52.62: SMAX=350.79: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.82
R0100:C00017------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    30.0 01:SW_7        3197.00   16.027 No_date   36:00   29.76 .336     .000
      [CN= 57.0: N= 3.00: Tp= 6.65]
      [IaREC= 4.00: SMIN= 76.32: SMAX=508.81: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.75
R0100:C00018------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    30.0 01:SW_6         165.00    1.482 No_date   33:00   37.54 .424     .000
      [CN= 67.0: N= 3.00: Tp= 4.18]
      [IaREC= 4.00: SMIN= 50.55: SMAX=336.97: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.67
R0100:C00019------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    30.0 01:VG_DR       1332.00   10.635 No_date   35:00   42.46 .479     .000
      [CN= 72.0: N= 3.00: Tp= 5.95]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
R0100:C00020------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
 *  CONTINUOUS NASHYD    30.0 01:SW_5         224.00    9.294 No_date   28:30   47.59 .537     .000
      [CN= 77.0: N= 3.00: Tp=  .75]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.20
R0100:C00021------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    30.0 01:FL_CK       4945.00   51.121 No_date   33:00   44.15 .498     .000
      [CN= 74.0: N= 3.00: Tp= 4.45]
      [IaREC= 4.00: SMIN= 36.67: SMAX=244.49: SK= .010]
      [InterEventTime=  12.00]
R0100:C00022------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
 *  CONTINUOUS NASHYD    30.0 01:SW_5A2        20.00    1.014 No_date   28:30   52.03 .587     .000
      [CN= 81.0: N= 3.00: Tp=  .62]
      [IaREC= 4.00: SMIN= 25.21: SMAX=168.09: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.61
R0100:C00023------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    30.0 01:SW_5A1      1412.00    9.884 No_date   37:30   45.85 .518     .000
      [CN= 75.0: N= 3.00: Tp= 8.00]
      [IaREC= 4.00: SMIN= 33.81: SMAX=225.43: SK= .010]
      [InterEventTime=  12.00]
R0100:C00024------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    30.0 01:SW_4         585.00   14.684 No_date   29:30   52.03 .587     .000
      [CN= 81.0: N= 3.00: Tp= 1.75]
      [IaREC= 4.00: SMIN= 25.21: SMAX=168.09: SK= .010]
      [InterEventTime=  12.00]
R0100:C00025------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    30.0 01:LM_CK       1021.00   19.515 No_date   30:30   51.13 .577     .000
      [CN= 80.0: N= 3.00: Tp= 2.46]
      [IaREC= 4.00: SMIN= 26.32: SMAX=175.50: SK= .010]
      [InterEventTime=  12.00]
R0100:C00026------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
 *  CONTINUOUS NASHYD    30.0 01:SW_2         177.00    7.344 No_date   28:30   47.59 .537     .000
      [CN= 77.0: N= 3.00: Tp=  .75]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0100:C00027------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    30.0 01:SM_DR       1122.00   17.710 No_date   31:30   52.03 .587     .000
      [CN= 81.0: N= 3.00: Tp= 3.25]
      [IaREC= 4.00: SMIN= 25.21: SMAX=168.09: SK= .010]
      [InterEventTime=  12.00]
R0100:C00028------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    30.0 01:MO_DR       2737.00   40.026 No_date   31:00   46.72 .527     .000
      [CN= 76.0: N= 3.00: Tp= 3.03]
      [IaREC= 4.00: SMIN= 32.46: SMAX=216.39: SK= .010]
      [InterEventTime=  12.00]
R0100:C00029------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    30.0 01:SW_1        3176.00   43.079 No_date   32:00   48.46 .547     .000
      [CN= 78.0: N= 3.00: Tp= 3.56]
      [IaREC= 4.00: SMIN= 29.88: SMAX=199.22: SK= .010]
      [InterEventTime=  12.00]
#
# Routing hydrographs
#
# Starting with the addition of Jock River Headwater and Subwatershed 13
#
R0100:C00030------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              30.0 02:JR_HW       3680.00   21.054 No_date   36:30   35.15  n/a     .000
                    +    30.0 02:SW_13        971.00    8.058 No_date   32:30   32.81  n/a     .000
                 SUM=    30.0 01:S_N13       4651.00   27.020 No_date   35:00   34.66  n/a     .000
#
# Sum of hydrographs from Node 13 routed to Node 13A
# (Approximated cross-section - see cross-section 258)
# Use n=0.04 for summer conditions and n=0.025 for spring conditions
#
R0100:C00031------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->   30.0 02:S_N13       4651.00   27.020 No_date   35:00   34.66  n/a     .000
     [RDT=30.00] out<-   30.0 01:N13A        4651.00   22.149 No_date   38:30   34.66  n/a     .000
      [L/S/n= 9074./ .022/.040]
      {Vmax=  .594:Dmax= 4.138}
#
# Addition of Subwatershed Jock River at Goodwood Marsh to Node 13A
#
R0100:C00032------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              30.0 02:N13A        4651.00   22.149 No_date   38:30   34.66  n/a     .000
                    +    30.0 02:JR_GWM      3074.00    9.983 No_date   39:30   28.27  n/a     .000
                 SUM=    30.0 01:SN13A       7725.00   31.987 No_date   39:30   32.12  n/a     .000
#
# Insertion of a reservoir to simulate the effects of the Goodwood Marsh
#
R0100:C00033------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->   30.0 02:SN13A       7725.00   31.987 No_date   39:30   32.12  n/a     .000
                out <=   30.0 01:RES_GM      7725.00    3.938 No_date   63:30   32.12  n/a     .000
     {MxStoUsed=.1767E+03  m3}
#
R0100:C00034------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD             30.0 01:RES_GM      7725.00    3.938 No_date   63:30   32.12  n/a     .000
      fname :H_RESGM
      remark:Outflow from Res GM
# Output of Reservoir Goodwood Marsh routed from Node 13A to Node 12
# (Approximated cross-section - see cross-section 258)
# Use n=0.04 for summer conditions and n=0.025 for spring conditions
R0100:C00035------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->   30.0 02:RES_GM      7725.00    3.938 No_date   63:30   32.12  n/a     .000
     [RDT=30.00] out<-   30.0 01:N12         7725.00    3.934 No_date   66:30   32.12  n/a     .000
      [L/S/n= 5926./ .076/.040]
      {Vmax=  .560:Dmax= 1.558}
#
# Addition of Subwatershed Jock River at Ashton to Node 12
#
R0100:C00036------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              30.0 02:N12         7725.00    3.934 No_date   66:30   32.12  n/a     .000
                    +    30.0 02:JR_ASH      1781.00   19.356 No_date   32:30   42.46  n/a     .000
                 SUM=    30.0 01:S_N12       9506.00   21.410 No_date   32:30   34.06  n/a     .000
R0100:C00037------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD             30.0 01:S_N12       9506.00   21.410 No_date   32:30   34.06  n/a     .000
      fname :H_SN12
      remark:flow at S_N12 near Ashton
#
# Sum of hydrographs from Node 12 routed to Node 11
# (Approximated cross-section - see cross-section 258)
# Use n=0.04 for summer conditions and n=0.025 for spring conditions
R0100:C00038------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->   30.0 02:S_N12       9506.00   21.410 No_date   32:30   34.06  n/a     .000
     [RDT=30.00] out<-   30.0 01:N11         9506.00   21.115 No_date   33:00   34.06  n/a     .000
      [L/S/n=  972./ .051/.040]
      {Vmax=  .760:Dmax= 3.206}
#
# Sum of hydrographs from Node 12 routed to Node 11 with Dummy section 248
#
R0100:C00039------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->   30.0 02:S_N12       9506.00   21.410 No_date   32:30   34.06  n/a     .000
     [RDT=30.00] out<-   30.0 01:Dum11       9506.00   21.111 No_date   32:30   34.06  n/a     .000
      [L/S/n=  972./ .054/.040]
      {Vmax=  .774:Dmax= 3.175}
#
# Addition of Subwatershed 11 and No Name Creek to Node 11
#
R0100:C00040------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              30.0 02:Dum11       9506.00   21.111 No_date   32:30   34.06  n/a     .000
                    +    30.0 02:SW_11        500.00   10.499 No_date   29:00   36.74  n/a     .000
                    +    30.0 02:NN_CK       1917.00   14.197 No_date   34:00   36.74  n/a     .000
                 SUM=    30.0 01:S_N11      11923.00   37.433 No_date   33:00   34.60  n/a     .000
#
# Sum of hydrographs from Node 11 routed to Node 10
# Section 1
#
R0100:C00041------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->   30.0 02:S_N11      11923.00   37.433 No_date   33:00   34.60  n/a     .000
     [RDT=30.00] out<-   30.0 01:N10        11923.00   23.312 No_date   39:00   34.60  n/a     .000
      [L/S/n=14028./ .157/.040]
      {Vmax=  .484:Dmax= 1.483}
#
# Addition of Subwatershed 10 to Node 10
#
R0100:C00042------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              30.0 02:N10        11923.00   23.312 No_date   39:00   34.60  n/a     .000
                    +    30.0 02:SW_10       5666.00   36.560 No_date   37:30   42.46  n/a     .000
                 SUM=    30.0 01:S_N10      17589.00   59.667 No_date   38:00   37.13  n/a     .000
R0100:C00043------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD             30.0 01:S_N10      17589.00   59.667 No_date   38:00   37.13  n/a     .000
      fname :H_SN10
      remark:flow at S_N10: N10 + SW_10
# Addition of Kings Creek to S_N10
#
R0100:C00044------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              30.0 02:S_N10      17589.00   59.667 No_date   38:00   37.13  n/a     .000
                    +    30.0 02:KG_CK       8376.00   34.456 No_date   39:30   36.74  n/a     .000
                 SUM=    30.0 01:S_N10A     25965.00   93.246 No_date   39:30   37.01  n/a     .000
#
# Sum of hydrographs from Node 10 routed to Node 9
# Section 2
#
R0100:C00045------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->   30.0 02:S_N10A     25965.00   93.246 No_date   39:30   37.01  n/a     .000
     [RDT=30.00] out<-   30.0 01:N9         25965.00   91.373 No_date   39:30   37.00  n/a     .000
      [L/S/n= 3982./ .075/.040]
      {Vmax=  .769:Dmax= 2.125}
#
# Addition of Subwatershed 9 and Nichols Creek to Node 9
#
R0100:C00046------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              30.0 02:N9         25965.00   91.373 No_date   39:30   37.00  n/a     .000
                    +    30.0 02:SW_9        1132.00   16.257 No_date   30:30   40.80  n/a     .000
                    +    30.0 02:NC_CK       4464.00   17.270 No_date   39:30   33.59  n/a     .000
                 SUM=    30.0 01:S_N9       31561.00  112.264 No_date   39:30   36.66  n/a     .000
#
# Sum of hydrographs from Node 9 routed to Node 8
# Section 3
#
R0100:C00047------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->   30.0 02:S_N9       31561.00  112.264 No_date   39:30   36.66  n/a     .000
     [RDT=30.00] out<-   30.0 01:N8         31561.00  106.464 No_date   40:00   36.66  n/a     .000
      [L/S/n= 2269./ .088/.045]
      {Vmax=  .372:Dmax= 1.905}
#
# Addition of Subwatershed 8 and Hobb's Drain to Node 8
#
R0100:C00048------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              30.0 02:N8         31561.00  106.464 No_date   40:00   36.66  n/a     .000
                    +    30.0 02:SW_8         131.00    3.096 No_date   28:30   34.37  n/a     .000
                    +    30.0 02:HB_DR       3854.00   20.590 No_date   38:00   36.74  n/a     .000
                 SUM=    30.0 01:S_N8       35546.00  126.233 No_date   39:30   36.66  n/a     .000
#
# Sum of hydrographs from Node 8 routed to Node 7
# Section 4
#
R0100:C00049------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->   30.0 02:S_N8       35546.00  126.233 No_date   39:30   36.66  n/a     .000
     [RDT=30.00] out<-   30.0 01:N7         35546.00  108.761 No_date   44:30   36.66  n/a     .000
      [L/S/n= 3750./ .053/.070]
      {Vmax=  .236:Dmax= 2.384}
#
# Addition of Subwatershed 7 to Node 7
#
R0100:C00050------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              30.0 02:N7         35546.00  108.761 No_date   44:30   36.66  n/a     .000
                    +    30.0 02:SW_7        3197.00   16.027 No_date   36:00   29.76  n/a     .000
                 SUM=    30.0 01:S_N7       38743.00  117.353 No_date   43:30   36.09  n/a     .000
R0100:C00051------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD             30.0 01:S_N7       38743.00  117.353 No_date   43:30   36.09  n/a     .000
      fname :H_SN7
      remark:flow at S_N7: N7 + SW_7
# Insertion of a reservoir to simulate the effects of the Richmond Fen.
# Storage area and volumes were estimated from available topo maps.
# Release rate from fen was assumed to be controlled by the downstream
# river cross-section for summer conditions.  It is was assumed that for up to
# 0.75 m of water, the main channel of the river provided the storage.  Above
# this depth, the wetland starts to signigicantly store water.
#
R0100:C00052------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->   30.0 02:S_N7       38743.00  117.353 No_date   43:30   36.09  n/a     .000
                out <=   30.0 01:RES_RF     38743.00   60.593 No_date   58:30   36.09  n/a     .000
     {MxStoUsed=.5014E+03  m3}
R0100:C00053------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD             30.0 01:RES_RF     38743.00   60.593 No_date   58:30   36.09  n/a     .000
      fname :H_ResRF
      remark:outflow of Richmond Fen
#
# Sum of hydrographs from Node 7 routed to Node 6
# Section 5
#
R0100:C00054------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->   30.0 02:RES_RF     38743.00   60.593 No_date   58:30   36.09  n/a     .000
     [RDT=30.00] out<-   30.0 01:N6         38743.00   60.336 No_date   60:00   36.09  n/a     .000
      [L/S/n= 3056./ .082/.025]
      {Vmax=  .553:Dmax= 1.353}
#
# Addition of Subwatershed 6 and Van Gaal Drain to Node 6
#
R0100:C00055------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              30.0 02:N6         38743.00   60.336 No_date   60:00   36.09  n/a     .000
                    +    30.0 02:SW_6         165.00    1.482 No_date   33:00   37.54  n/a     .000
                    +    30.0 02:VG_DR       1332.00   10.635 No_date   35:00   42.46  n/a     .000
                 SUM=    30.0 01:S_N6       40240.01   60.497 No_date   59:30   36.31  n/a     .000
```

```
#
# Sum of hydrographs from Node 6 routed to Node 5
# Section 6
#
R0100:C00056------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->   30.0 02:S_N6       40240.01   60.497 No_date   59:30   36.31  n/a     .000
     [RDT=30.00] out<-   30.0 01:N5         40240.01   60.383 No_date   60:30   36.31  n/a     .000
      [L/S/n= 1852./ .054/.035]
      {Vmax=  .490:Dmax= 1.451}
#
# Addition of Subwatershed 5 and Flowing Creek to Node 5
#
R0100:C00057------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              30.0 02:N5         40240.01   60.383 No_date   60:30   36.31  n/a     .000
                    +    30.0 02:SW_5         224.00    9.294 No_date   28:30   47.59  n/a     .000
                    +    30.0 02:FL_CK       4945.00   51.121 No_date   33:00   44.15  n/a     .000
                 SUM=    30.0 01:S_N5       45409.01   79.891 No_date   34:00   37.22  n/a     .000
#
# Sum of hydrographs from Node 5 routed to Node 5A
# Section 7
#
R0100:C00058------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->   30.0 02:S_N5       45409.01   79.891 No_date   34:00   37.22  n/a     .000
     [RDT=30.00] out<-   30.0 01:N5A        45409.01   79.815 No_date   34:00   37.22  n/a     .000
      [L/S/n=  556./ .090/.040]
      {Vmax=  .544:Dmax= 1.346}
#
# Addition of Subwatershed 5A1 and Subwatershed 5A2 to Node 5A
#
R0100:C00059------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              30.0 02:N5A        45409.01   79.815 No_date   34:00   37.22  n/a     .000
                    +    30.0 02:SW_5A2        20.00    1.014 No_date   28:30   52.03  n/a     .000
                    +    30.0 02:SW_5A1      1412.00    9.884 No_date   37:30   45.85  n/a     .000
                 SUM=    30.0 01:S_N5A      46841.01   88.619 No_date   34:30   37.48  n/a     .000
#
# Sum of hydrographs from Node 5A routed to Node 4
# Section 8
#
R0100:C00060------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->   30.0 02:S_N5A      46841.01   88.619 No_date   34:30   37.48  n/a     .000
     [RDT=30.00] out<-   30.0 01:N4         46841.01   84.955 No_date   36:00   37.48  n/a     .000
      [L/S/n= 4630./ .043/.035]
      {Vmax=  .901:Dmax= 3.849}
#
# Addition of Subwatershed 4 and Leamy Creek to Node 4
#
R0100:C00061------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              30.0 02:N4         46841.01   84.955 No_date   36:00   37.48  n/a     .000
                    +    30.0 02:SW_4         585.00   14.684 No_date   29:30   52.03  n/a     .000
                    +    30.0 02:LM_CK       1021.00   19.515 No_date   30:30   51.13  n/a     .000
                 SUM=    30.0 01:S_N4       48447.00   95.694 No_date   34:30   37.95  n/a     .000
R0100:C00062------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD             30.0 01:S_N4       48447.00   95.694 No_date   34:30   37.95  n/a     .000
      fname :S_N4.0100
      remark:flow at S_N4
#
# Sum of hydrographs from Node 4 routed to Node 2
# Section 9
#
R0100:C00063------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->   30.0 02:S_N4       48447.00   95.694 No_date   34:30   37.95  n/a     .000
     [RDT=30.00] out<-   30.0 01:N2         48447.00   95.342 No_date   35:00   37.95  n/a     .000
      [L/S/n= 1667./ .060/.040]
      {Vmax=  .942:Dmax= 3.915}
#
# Addition of Subwatershed 2 with Monohan Drain and Smith Drain to Node 2
#
R0100:C00064------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              30.0 02:N2         48447.00   95.342 No_date   35:00   37.95  n/a     .000
                    +    30.0 02:SW_2         177.00    7.344 No_date   28:30   47.59  n/a     .000
                    +    30.0 02:SM_DR       1122.00   17.710 No_date   31:30   52.03  n/a     .000
                    +    30.0 02:MO_DR       2737.00   40.026 No_date   31:00   46.72  n/a     .000
                 SUM=    30.0 01:S_N2       52483.00  141.415 No_date   32:30   38.74  n/a     .000
R0100:C00065------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD             30.0 01:S_N2       52483.00  141.415 No_date   32:30   38.74  n/a     .000
      fname :H_SN2
      remark:flow at S_N2 Jock River Gauge at Moodie Dr.
#
# Sum of hydrographs from Node 2 routed to Node 1
# Section 10
#
R0100:C00066------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->   30.0 02:S_N2       52483.00  141.415 No_date   32:30   38.74  n/a     .000
     [RDT=30.00] out<-   30.0 01:N1         52483.00  124.304 No_date   35:00   38.74  n/a     .000
      [L/S/n=10046./ .050/.040]
      {Vmax= 1.091:Dmax= 4.553}
#
# Addition of Subwatershed 1 to Node 1
#
R0100:C00067------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              30.0 02:N1         52483.00  124.304 No_date   35:00   38.74  n/a     .000
                    +    30.0 02:SW_1        3176.00   43.079 No_date   32:00   48.46  n/a     .000
                 SUM=    30.0 01:N1         55659.00  158.420 No_date   34:00   39.29  n/a     .000
R0100:C00068------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD             30.0 01:N1         55659.00  158.420 No_date   34:00   39.29  n/a     .000
      fname :N1.0100
      remark:total outflow of Jock River
##############################################################################
R0100:C00002---------------------------------------------------------------------------------------
    FINISH
---------------------------------------------------------------------------------------------------
***************************************************************************************************
     WARNINGS / ERRORS / NOTES
     -------------------------
R0002:C00015  CONTINUOUS NASHYD
*** WARNING: Time step is too large for value of TP. RV may be ok.  Peak flow could be off.
R0002:C00020  CONTINUOUS NASHYD
*** WARNING: Time step is too large for value of TP. RV may be ok.  Peak flow could be off.
R0002:C00022  CONTINUOUS NASHYD
*** WARNING: Time step is too large for value of TP. RV may be ok.  Peak flow could be off.
R0002:C00026  CONTINUOUS NASHYD
*** WARNING: Time step is too large for value of TP. RV may be ok.  Peak flow could be off.
R0005:C00015  CONTINUOUS NASHYD
*** WARNING: Time step is too large for value of TP. RV may be ok.  Peak flow could be off.
R0005:C00020  CONTINUOUS NASHYD
*** WARNING: Time step is too large for value of TP. RV may be ok.  Peak flow could be off.
R0005:C00022  CONTINUOUS NASHYD
*** WARNING: Time step is too large for value of TP. RV may be ok.  Peak flow could be off.
R0005:C00026  CONTINUOUS NASHYD
*** WARNING: Time step is too large for value of TP. RV may be ok.  Peak flow could be off.
R0010:C00015  CONTINUOUS NASHYD
*** WARNING: Time step is too large for value of TP. RV may be ok.  Peak flow could be off.
R0010:C00020  CONTINUOUS NASHYD
*** WARNING: Time step is too large for value of TP. RV may be ok.  Peak flow could be off.
R0010:C00022  CONTINUOUS NASHYD
*** WARNING: Time step is too large for value of TP. RV may be ok.  Peak flow could be off.
R0010:C00026  CONTINUOUS NASHYD
*** WARNING: Time step is too large for value of TP. RV may be ok.  Peak flow could be off.
R0025:C00015  CONTINUOUS NASHYD
*** WARNING: Time step is too large for value of TP. RV may be ok.  Peak flow could be off.
R0025:C00020  CONTINUOUS NASHYD
*** WARNING: Time step is too large for value of TP. RV may be ok.  Peak flow could be off.
R0025:C00022  CONTINUOUS NASHYD
*** WARNING: Time step is too large for value of TP. RV may be ok.  Peak flow could be off.
R0025:C00026  CONTINUOUS NASHYD
*** WARNING: Time step is too large for value of TP. RV may be ok.  Peak flow could be off.
R0050:C00015  CONTINUOUS NASHYD
*** WARNING: Time step is too large for value of TP. RV may be ok.  Peak flow could be off.
R0050:C00020  CONTINUOUS NASHYD
*** WARNING: Time step is too large for value of TP. RV may be ok.  Peak flow could be off.
R0050:C00022  CONTINUOUS NASHYD
*** WARNING: Time step is too large for value of TP. RV may be ok.  Peak flow could be off.
R0050:C00026  CONTINUOUS NASHYD
*** WARNING: Time step is too large for value of TP. RV may be ok.  Peak flow could be off.
R0100:C00015  CONTINUOUS NASHYD
*** WARNING: Time step is too large for value of TP. RV may be ok.  Peak flow could be off.
R0100:C00020  CONTINUOUS NASHYD
*** WARNING: Time step is too large for value of TP. RV may be ok.  Peak flow could be off.
R0100:C00022  CONTINUOUS NASHYD
*** WARNING: Time step is too large for value of TP. RV may be ok.  Peak flow could be off.
R0100:C00026  CONTINUOUS NASHYD
*** WARNING: Time step is too large for value of TP. RV may be ok.  Peak flow could be off.
   Simulation ended on 2021-02-22     at 15:43:22
===================================================================================================
```

Ottawa. ON
Paris. ON
Gatineau. QC
Montréal. QC
Québec. QC

Attachment B

Model 2 – Jock River Reach One Model

Stantec, 2007

SWMHYMO Input & Summary files

```
2    Metric units
*#*****************************************************************************
*#  Project Name: [Jock River Reach 1 SubWatershed Study]Project #: [160400414]
*#  Date         : October 2006
*#  Modeller     : [Navin Gautam/ Original by Ana M Paerez]
*#  Company      : Stantec.
*#  License #    :  3824306
*#*****************************************************************************
START                 TZERO=[0.0],  METOUT=[2],  NSTORM=[1],  NRUN=[002]
*%                     ["C24SC002.stm"] <--storm filename, one per line for NSTORM time
*#-----------------|-----------------------------------------------------------|
READ STORM            STORM_FILENAME=["storm.001"]
*%-----------------|-----------------------------------------------------------|
MODIFY STORM          ICASEms=[1],  NSHIFT=[96],
                      RedFACT=[1],
*%-----------------|-----------------------------------------------------------|
DEFAULT VALUES        ICASEdv=[1],  read and print values
                      DEFVAL_FILENAME=["MODIFIED.VAL"]
COMPUTE API           APII=[50], APIK=[.85]/day
*#*****************************************************************************
*#
*#            JOCK RIVER REACH 1 SUBWATERSHED STUDY DISCRETIZED MODEL
*#                    PROPOSED CONDITIONS DESIGN STORM MODEL (SUMMER)
*#
*# Version: Draft Final Report, October 2006
*# Revision History
*# -Draft Interim Condition Report, Nov. 2005
*#*****************************************************************************
*# Assumptions
*# - All catchments are assumed to be developed except S-1, S-2, and SW-1a
*# - SWM facilities are modeled
*# - Rating curves were estimated based on existing reports and modeling for the
*#   proposed SWM facilities
*# - The rating curve for the existing Kennedy Burnett SWM Facility was obtained from
*#   the Urban Runoff Treatment in the Kennedy Burnett Settling Pond (URTKBP)- Regional
*#   Municipality of Ottawa Carleton, March 1983
*# - River routing modeled
*# - River cross sections obtained from RVCA's HEC-RAS hydraulic model
*#-----------------|-----------------------------------------------------------|
*# Parameters
*# - Design Storms: 2,5,10,25,50 &1 00yr events: 24hr SCS (DT=10min)-model comparison
*# - Impervious area weighted based on: rural subdivision @20%, urban @55%
*# - NRCS(SCS) CN based on landuse (airphoto) and soil type (base mapping)
*# - Time to peak using Uplands Method
*#-----------------|-----------------------------------------------------------|
*#*****************************************************************************
*#Read hydrograph upstream of N2 from RVCA Jock R. floodrisk watershed modeling
*#*****************************************************************************
READ HYD              ID=[ 1 ],  NHYD=["S_N2"],
                      HYD_FILENAME=["H-S_N2"]
*%-----------------|-----------------------------------------------------------|
*#
*# Hydrograph from Node 2 routed to Node 416
*# Channel X-Section obtained from RVCA Hydraulic Model - Station 9025
*#
ROUTE CHANNEL         IDout=[4], NHYD=["N_416"] ,IDin=[1] ,
                      RDT=[10](min),
                      CHLGTH=[2327](m),  CHSLOPE=[0.0498](%),
                                         FPSLOPE=[0.0498](%),
                      SECNUM=[1.0],       NSEG=[3]
                      ( SEGROUGH, SEGDIST (m))=
                        [0.075,-23.96
                        -0.055,23.96
                        0.075,157.38]  NSEG times
                      ( DISTANCE (m), ELEVATION (m))=
                      [-336.97,93.5]
```

```
                    [-318.85,93]
                    [-259,92.5]
                    [-133.18,92]
                    [-33.17,92]
                    [-27.21,92]
                    [-26.14,91.5]
                    [-24.99,91]
                    [-23.96,90.5]
                    [-14.33,88.26]
                    [-0.68,88.12]
                    [14.33,88.26]
                    [23.96,90.5]
                    [32.12,91]
                    [43.74,91.5]
                    [57.09,92]
                    [73.53,92.5]
                    [108.27,93]
                    [125.88,93.5]
                    [144.81,94]
                    [157.38,94.5]
*%-----------------|-----------------------------------------------------------|
*#*******************************************************************************
*#    Catchment SW-1a
*#    - Portion of RVCA catchment SW_1 outside of Reach 1 subwatershed
*#    - Undeveloped agricultural land
*#*******************************************************************************
CONTINUOUS NASHYD   ID=[2], NHYD=["SW_1a"], DT=[5]min, AREA=[546](ha),
                    DWF=[0](cms), CN/C=[72],  IA=[4.67](mm),
                    N=[3], TP=[2.79]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
ADD HYD             IDsum=[ 3 ], NHYD=["SN_416"], IDs to add=[4,2]
*%-----------------|-----------------------------------------------------------|
SAVE HYD            ID=[ 3 ],   # OF PCYCLES=[-1],  ICASEsh=[1]
                    HYD_COMMENT=["Total Flows at Highway 416"]
*%-----------------|-----------------------------------------------------------|
*#
*# Hydrograph from Node 416 routed to Node at Okeefe drain
*# Channel X-Section obtained from RVCA Hydraulic Model - Station 7245
*#
ROUTE CHANNEL       IDout=[1], NHYD=["N_OK"] ,IDin=[3] ,
                    RDT=[5](min),
                    CHLGTH=[497](m),  CHSLOPE=[0.3018](%),
                                        FPSLOPE=[0.3018](%),
                    SECNUM=[1.0],       NSEG=[3]
                    ( SEGROUGH, SEGDIST (m))=
                      [0.075,-19.40
                      -0.055,19.40
                      0.075,377.02] NSEG times
                    ( DISTANCE (m), ELEVATION (m))=
                    [-1062.81, 93.00]
                    [-1061.41, 92.50]
                    [-945.91, 92.00]
                    [-783.64, 91.50]
                    [-136.74, 91.00]
                    [-134.06, 91.00]
                    [-128.97, 91.00]
                    [-86.04, 91.00]
                    [-20.86, 91.00]
```

```
                        [-20.18, 90.50]
                        [-19.40, 90.00]
                        [-11.68, 86.89]
                        [0.00, 86.10]
                        [12.09, 86.81]
                        [19.40, 90.00]
                        [34.68, 90.50]
                        [60.56, 91.00]
                        [170.14, 91.00]
                        [175.05, 90.50]
                        [180.29, 90.00]
                        [193.41, 90.00]
                        [195.98, 90.50]
                        [377.02, 92.50]
*%-----------------|----------------------------------------------------------|
*#*****************************************************************************
*#    Catchment OKEEFE
*#    - To O'Keefe drain (north of the Jock)
*#    - Developed with assumed 43% imp.
*#*****************************************************************************
CONTINUOUS STANDHYD ID=[2], NHYD=["OKEEFE"], DT=[5](min), AREA=[448](ha),
                    XIMP=[0.43], TIMP=[0.43], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[77],
                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[0.5](%),
                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[0.5](%),
                            LGI=[1728](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[18](hrs),   END=-1

*#*****************************************************************************
*#    Okeefe Pond
*#    - Rating curve obtained assuming 40m3/ha in 24 hours for quality control
*#    and a ratio of the catchment area to the West Clarke pond rating curve
*#      from the MSS for the next coordinates
*#*****************************************************************************
ROUTE RESERVOIR     IDout=[4],   NHYD=["P_OKE"],  IDin=[2],
                    RDT=[5](min),
                          TABLE of ( OUTFLOW-STORAGE ) values
                                      (cms) - (ha-m)
                                    [   0.0 ,  0.0 ]
                                    [   0.20 , 1.72]
                                    [   -1  ,  -1  ]  (max twenty pts)
                    IDovf=[9], NHYDovf=["ok-OVF"]

*%-----------------|----------------------------------------------------------|
ADD HYD             IDsum=[ 3 ], NHYD=["SN_OK"], IDs to add=[1,4,9]
*%-----------------|----------------------------------------------------------|
SAVE HYD            ID=[ 3 ],   # OF PCYCLES=[-1],  ICASEsh=[1]
                    HYD_COMMENT=["Total Flows at Okeefe Drain"]
*%-----------------|----------------------------------------------------------|
*#
*# Hydrograph from Node Okeefe routed to Node at Foster Drain
*# Channel X-Section obtained from RVCA Hydraulic Model - Station 6215
*#
ROUTE CHANNEL       IDout=[1], NHYD=["N_FO"] ,IDin=[3] ,
                    RDT=[5](min),
                    CHLGTH=[1183](m),  CHSLOPE=[0.0761](%),
                                        FPSLOPE=[0.0761](%),
                    SECNUM=[1.0],       NSEG=[3]
                    ( SEGROUGH, SEGDIST (m))=
                      [0.050,-33.89
                      -0.035,31.59
                      0.050,854.54] NSEG times
```

```
                    ( DISTANCE (m), ELEVATION (m))=
                    [-1075.50, 93.00]
                    [-1070.59, 92.50]
                    [-1003.21, 92.00]
                    [-1001.67, 92.00]
                    [-986.64, 92.00]
                    [-816.61, 91.50]
                    [-797.29, 91.00]
                    [-794.18, 91.00]
                    [-775.41, 91.50]
                    [-702.63, 91.50]
                    [-546.19, 91.50]
                    [-529.54, 91.50]
                    [-323.44, 91.00]
                    [-320.71, 91.00]
                    [-183.59, 91.00]
                    [-182.54, 90.50]
                    [-181.36, 90.00]
                    [-177.37, 90.00]
                    [-87.70, 90.00]
                    [-33.89, 90.00]
                    [-18.52, 86.88]
                    [0.00,85.20]
                    [16.20, 86.83]
                    [31.59, 90.00]
                    [33.03, 90.50]
                    [34.41, 91.00]
                    [34.99, 91.00]
                    [72.19, 91.00]
                    [208.76, 91.50]
                    [846.25, 92.00]
                    [854.54, 94.00]
*%-----------------|-------------------------------------------------------------|
*#*******************************************************************************
*#    Catchment FOSTER
*#    - To Foster ditch (north of the Jock)
*#    - Partially developed (medium density); remaining agricultural
*#*******************************************************************************
CONTINUOUS STANDHYD ID=[2], NHYD=["FOSTER"], DT=[5]min, AREA=[373](ha),
                    XIMP=[0.55], TIMP=[0.55], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[74],
                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[0.5](%),
                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[0.5](%),
                            LGI=[1577](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[18](hrs),   END=-1

*#*******************************************************************************
*#    Foster Pond
*#    - Rating curve obtained assuming 40m3/ha in 24 hours for quality control
*#    and a ratio of the catchment area to the West Clarke pond rating curve
*#      from the MSS for the next coordinates
*#*******************************************************************************
ROUTE RESERVOIR     IDout=[4],   NHYD=["P_FOS"],  IDin=[2],
                    RDT=[5](min),
                          TABLE of ( OUTFLOW-STORAGE ) values
                                      (cms) - (ha-m)
                                    [   0.0 ,  0.0 ]
                                    [   0.20 , 1.72]
                                    [   -1  ,  -1  ]  (max twenty pts)
                          IDovf=[9], NHYDovf=["FO-OVF"]
*%-----------------|-------------------------------------------------------------|
ADD HYD             IDsum=[ 3 ], NHYD=["SN_FO"], IDs to add=[1,4,9]
```

```
*%-----------------|-----------------------------------------------------------|
SAVE HYD             ID=[ 3 ],   # OF PCYCLES=[-1],  ICASEsh=[1]
                     HYD_COMMENT=["Total Flows at Foster Drain"]
*%-----------------|-----------------------------------------------------------|
*#
*# Hydrograph from Node Foster routed to Node at Cedarview Road
*# Channel X-Section obtained from RVCA Hydraulic Model - Station 6016
*#
ROUTE CHANNEL        IDout=[1], NHYD=["N_CE"] ,IDin=[3] ,
                     RDT=[5](min),
                     CHLGTH=[159](m),  CHSLOPE=[0.0818](%),
                                         FPSLOPE=[0.0818](%),
                     SECNUM=[1.0],       NSEG=[3]
                     ( SEGROUGH, SEGDIST (m))=
                       [0.050,-15.46
                       -0.035,26.55
                       0.050,1299.52] NSEG times
                     ( DISTANCE (m), ELEVATION (m))=
                     [-891.38, 93.00]
                     [-882.49, 93.00]
                     [-880.92, 92.50]
                     [-879.37, 92.00]
                     [-877.72, 91.50]
                     [-876.10, 91.00]
                     [-873.23, 91.00]
                     [-871.82, 91.50]
                     [-870.40, 92.00]
                     [-803.44, 92.00]
                     [-645.23, 91.50]
                     [-391.20, 91.50]
                     [-91.00, 91.50]
                     [-85.52, 91.50]
                     [-15.46, 89.40]
                     [-9.79, 89.31]
                     [-3.22, 86.24]
                     [3.22, 85.07]
                     [10.96, 85.79]
                     [16.44, 86.49]
                     [26.55, 89.45]
                     [29.03, 90.27]
                     [35.76, 90.67]
                     [36.67, 91.00]
                     [108.08, 91.00]
                     [109.82, 90.50]
                     [112.04, 90.50]
                     [114.62, 91.00]
                     [116.76, 91.50]
                     [118.42, 92.00]
                     [449.53, 92.50]
                     [571.98, 92.50]
                     [1093.81, 93.50]
                     [1150.48, 94.00]
                     [1299.52, 95.00]
*%-----------------|-----------------------------------------------------------|
*#*****************************************************************************
*#    Catchment S-1
*#    - To Jock River (north and south of Jock)
*#    - Primarily agricultural fields; portion of sand quarry
*#*****************************************************************************
CONTINUOUS NASHYD    ID=[2], NHYD=["S-1"], DT=[5]min, AREA=[245](ha),
                     DWF=[0](cms), CN/C=[77],  IA=[4.67](mm),
                     N=[3], TP=[1.10]hrs,
                     Continuous simulation parameters:
                     IaRECper=[4](hrs),
                     SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                     InterEventTime=[12](hrs)
```

```
                      Baseflow simulation parameters:
                      BaseFlowOption=[1] ,
                      InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                      VHydCond=[0.055](mm/hr),   END=-1

*%-----------------|-----------------------------------------------------------|
ADD HYD               IDsum=[ 3 ], NHYD=["SN_CE"], IDs to add=[1,2]
*%-----------------|-----------------------------------------------------------|
SAVE HYD              ID=[ 3 ],   # OF PCYCLES=[-1],  ICASEsh=[1]
                      HYD_COMMENT=["Total Flows at Cedarview Road"]
*%-----------------|-----------------------------------------------------------|
*#
*# Hydrograph from Node Cedarview Road routed to Node at West Clarke Drain
*# Channel X-Section obtained from RVCA Hydraulic Model - Station 5002
*#
ROUTE CHANNEL         IDout=[1], NHYD=["N_WC"] ,IDin=[3] ,
                      RDT=[5](min),
                      CHLGTH=[825](m),  CHSLOPE=[0.01](%),
                                          FPSLOPE=[0.01](%),
                      SECNUM=[1.0],       NSEG=[3]
                      ( SEGROUGH, SEGDIST (m))=
                        [0.050,-37.5
                        -0.035,37.50
                        0.050,1367.08] NSEG times
                      ( DISTANCE (m), ELEVATION (m))=
                      [-1095.18, 94.00]
                      [-1091.79, 93.50]
                      [-1088.95, 93.00]
                      [-1086.77, 93.00]
                      [-1069.38, 93.00]
                      [-1063.14, 93.00]
                      [-1017.52, 93.00]
                      [-899.70, 93.00]
                      [-877.78, 93.00]
                      [-859.62, 92.50]
                      [-803.18, 93.00]
                      [-789.92, 92.00]
                      [-37.50, 90.00]
                      [-19.61, 87.04]
                      [0.00, 85.70]
                      [14.87, 86.93]
                      [37.50, 90.00]
                      [38.54, 90.50]
                      [42.23, 91]
                      [157.05,91.50]
                      [161.44, 91.50]
                      [236.48, 93.00]
                      [385.47, 92.50]
                      [390.78, 92.50]
                      [863.80, 93.00]
                      [866.13, 93.00]
                      [990.85, 92.50]
                      [991.82, 92.50]
                      [993.04, 93.00]
                      [994.81, 93.50]
                      [1005.36, 93.00]
                      [1190.52, 93.00]
                      [1267.97, 93.50]
                      [1318.99, 94.00]
                      [1367.08, 94.50]
*%-----------------|-----------------------------------------------------------|
*#*****************************************************************************
*#    Catchment W_CLAR
*#    - To West Clarke Drain (south of the Jock)
*#    - Subdivision with 43% imp. as per Barrhaven South MSS
*#*****************************************************************************
```

```
CONTINUOUS STANDHYD ID=[2], NHYD=["W_CLAR"], DT=[5]min, AREA=[243](ha),
                    XIMP=[0.43], TIMP=[0.43], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[75],
                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
                            LGI=[1273](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[18](hrs),   END=-1

*%-----------------|-----------------------------------------------------------|
*#****************************************************************************
*#    West Clarke Pond 2
*#    - Rating curve obtained from Barrhaven South MSS modeling
*#    - Tributary Drainage Area to MSS Pond 2 = 241 ha
*#****************************************************************************
ROUTE RESERVOIR     IDout=[8],   NHYD=["MS_P2"],  IDin=[2],
                    RDT=[5](min),
                          TABLE of ( OUTFLOW-STORAGE ) values
                                      (cms) - (ha-m)
                                    [   0.0 ,  0.0 ]
                                    [   0.11 , 0.96]
                                    [   -1  ,  -1  ]  (max twenty pts)
                          IDovf=[9], NHYDovf=["P2-OVF"]
*%-----------------|-----------------------------------------------------------|
ADD HYD             IDsum=[ 4 ], NHYD=["SN_WC"], IDs to add=[8,9,1]
*%-----------------|-----------------------------------------------------------|
SAVE HYD            ID=[4],   # OF PCYCLES=[-1],  ICASEsh=[1]
                    HYD_COMMENT=["Total Flows at West Clarke Pond Outlet"]
*%-----------------|-----------------------------------------------------------|
*# Hydrograph from Node West Clarke routed to Node at Kennedy - Burnett Drain
*# Channel X-Section obtained from RVCA Hydraulic Model - Station 4534
*#
ROUTE CHANNEL       IDout=[1], NHYD=["N_KB"] ,IDin=[4] ,
                    RDT=[5](min),
                    CHLGTH=[1020](m),  CHSLOPE=[0.0498](%),
                                        FPSLOPE=[0.0498](%),
                    SECNUM=[1.0],       NSEG=[3]
                    ( SEGROUGH, SEGDIST (m))=
                      [0.050,-23.63
                      -0.035,23.63
                      0.050,728.3] NSEG times
                    ( DISTANCE (m), ELEVATION (m))=
                    [-1082.01,94]
                    [-1028.17,92.5]
                    [-992.3,93.5]
                    [-279.34,90]
                    [-23.63,90]
                    [-13.45,87.13]
                    [-0.07,86.24]
                    [10.54,87.15]
                    [23.63,90]
                    [24.86,90.5]
                    [26.72,91]
                    [45.07,91.5]
                    [128.17,91.5]
                    [270.7,92.5]
                    [728.3,95]

*%-----------------|-----------------------------------------------------------|
*#****************************************************************************
*#    Catchment KEN_BU
*#    - To Kennedy-Burnett SWM Facility
*#    - Outlets to Fraser-Clarke drain (north of the Jock)
```

```
*#    - Medium density residential subdivision
*#*******************************************************************************
CONTINUOUS STANDHYD ID=[2], NHYD=["KEN_BU"], DT=[5]min, AREA=[281](ha),
                    XIMP=[0.55], TIMP=[0.55], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[71],
                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
                            LGI=[1369](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[18](hrs),   END=-1
*%-----------------|-------------------------------------------------------------|
*#*******************************************************************************
*#   Existing Kennedy-Burnett SWM Facility
*#    - Rating curve obtained from URTKBP
*#    - Tributary Drainage Area to Pond = 160 ha
*#*******************************************************************************
ROUTE RESERVOIR     IDout=[5],   NHYD=["KEN_P"],  IDin=[2],
                    RDT=[5](min),
                          TABLE of ( OUTFLOW-STORAGE ) values
                                      (cms) - (ha-m)
                                    [   0.0 ,  0.0 ]
                                    [   0.13 , 0.26]
                                    [   0.43 , 0.56]
                                    [   0.67 , 0.90]
                                    [   0.86 , 1.32]
                                    [   1.01 , 1.79]
                                    [   1.15 , 2.33]
                                    [   -1  ,  -1  ]  (max twenty pts)
                          IDovf=[6], NHYDovf=["KEN-OV"]
*%-----------------|-------------------------------------------------------------|
*#*******************************************************************************
*#    Catchment FRASER
*#    - To Fraser-Clarke drain (north of the Jock)
*#    - Developed land with assumed 43% imp.
*#*******************************************************************************
CONTINUOUS STANDHYD ID=[7], NHYD=["FRASER"], DT=[5]min, AREA=[90](ha),
                    XIMP=[0.25], TIMP=[0.25], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[80],
                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
                            LGI=[775](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[18](hrs),   END=-1

*%-----------------|-------------------------------------------------------------|
ROUTE RESERVOIR     IDout=[8],   NHYD=["MS_P2"],  IDin=[7],
                    RDT=[5](min),
                          TABLE of ( OUTFLOW-STORAGE ) values
                                      (cms) - (ha-m)
                                    [   0.0 ,  0.0 ]
                                    [   0.04 , 0.36]
                                    [   -1  ,  -1  ]  (max twenty pts)
                          IDovf=[9], NHYDovf=["P2-OVF"]
*%-----------------|-------------------------------------------------------------|
ADD HYD             IDsum=[ 4 ], NHYD=["SN_KB"], IDs to add=[5,6,8,9,1]
*%-----------------|-------------------------------------------------------------|
SAVE HYD            ID=[4],   # OF PCYCLES=[-1],  ICASEsh=[1]
                    HYD_COMMENT=["Total Flows at Ken-Burnett Outlet"]
*%-----------------|-------------------------------------------------------------|
*# Hydrograph from Node Kennedy - Burnett Drain to Node Todd Drain
```

```
*# Channel X-Section obtained from RVCA Hydraulic Model - Station 3633
*#
ROUTE CHANNEL        IDout=[1], NHYD=["N_TO"] ,IDin=[4] ,
                     RDT=[5](min),
                     CHLGTH=[650](m),  CHSLOPE=[0.0498](%),
                                         FPSLOPE=[0.0498](%),
                     SECNUM=[1.0],       NSEG=[3]
                     ( SEGROUGH, SEGDIST (m))=
                       [0.050,-23.74
                       -0.035,23.74
                       0.050,74.7] NSEG times
                     ( DISTANCE (m), ELEVATION (m))=
                     [-74.18, 92.5]
                     [-65.96, 92]
                     [-54.17, 91.5]
                     [-29.24, 91]
                     [-27.41, 90.5]
                     [-25.64, 90]
                     [-23.74, 89.5]
                     [-22,89. 26]
                     [-20, 88.51]
                     [-19, 88.32]
                     [-15, 88.1]
                     [-10, 88.11]
                     [-5, 88.17]
                     [0, 88.27]
                     [5, 88.19]
                     [10, 88.06]
                     [15, 88.48]
                     [16, 88.7]
                     [23.74, 89.5]
                     [24.68, 90]
                     [25.57, 90.5]
                     [26.5, 91]
                     [47.55, 91]
                     [74.7, 92.5]
*%-----------------|-----------------------------------------------------------|

*#*****************************************************************************
*#    Catchment TODD
*#    - To Todd Drain (south of the Jock)
*#    - Subdivision with 43% imp. as per Barrhaven South MSS
*#*****************************************************************************
CONTINUOUS STANDHYD ID=[3], NHYD=["TODD"], DT=[5]min, AREA=[195](ha),
                     XIMP=[0.43], TIMP=[0.43], DWF=[0](cms), LOSS=[2],
                     SCS curve number CN=[77],
                     Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                             LGP=[40](m), MNP=[0.25], SCP=[0](min),
                     Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
                             LGI=[1140](m), MNI=[0.013], SCI=[0](min),
                     Continuous simulation parameters:
                     IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                     SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                     InterEventTime=[18](hrs),   END=-1

*#*****************************************************************************
*#    Todd Pond 3
*#    - Rating curve obtained from Barrhaven South MSS modeling
*#    - Tributary Drainage Area to MSS Pond 3 = 193 ha
*#*****************************************************************************
ROUTE RESERVOIR      IDout=[2],   NHYD=["MS_P3"],  IDin=[3],
                     RDT=[5](min),
                           TABLE of ( OUTFLOW-STORAGE ) values
                                       (cms) - (ha-m)
                                     [   0.0 ,  0.0 ]
                                     [   0.08 , 0.78]
```

```
                                    [   -1  ,  -1  ]  (max twenty pts)
                          IDovf=[9], NHYDovf=["P3-OVF"]
*%-----------------|---------------------------------------------------------------|
ADD HYD               IDsum=[10], NHYD=["SN_TO"], IDs to add=[1,2,9]
*%-----------------|---------------------------------------------------------------|
SAVE HYD              ID=[ 10 ],   # OF PCYCLES=[-1],  ICASEsh=[1]
                      HYD_COMMENT=["Total Flows at Todd Drain"]
*%-----------------|---------------------------------------------------------------
*#
*# Hydrograph from Todd Drain routed to Corrigan Drain
*# Channel X-Section obtained from RVCA Hydraulic Model - Station 2462
*#
ROUTE CHANNEL         IDout=[1], NHYD=["N_TO"] ,IDin=[10] ,
                      RDT=[5](min),
                      CHLGTH=[280](m),  CHSLOPE=[0.033](%),
                                        FPSLOPE=[0.033](%),
                      SECNUM=[1.0],       NSEG=[3]
                      ( SEGROUGH, SEGDIST (m))=
                        [0.075,-17.72
                        -0.045,17.72
                        0.075,80.62] NSEG times
                      ( DISTANCE (m), ELEVATION (m))=
                      [-83.32, 90.00]
                      [-81.36, 89.50]
                      [-79.12, 89.00]
                      [-76.13, 88.50]
                      [-20.46, 88.00]
                      [-19.36, 87.50]
                      [-18.51, 87.00]
                      [-17.72, 86.50]
                      [-11.95, 85.24]
                      [-0.11, 85.12]
                      [11.49, 85.20]
                      [17.72, 86.50]
                      [19.74, 87.00]
                      [21.22, 87.50]
                      [22.68, 88.00]
                      [24.28, 88.50]
                      [26.79, 89.00]
                      [71.98, 90.00]
                      [80.62, 90.50]
*%-----------------|---------------------------------------------------------------|
*#*****************************************************************************
*#    Catchment CORRIG
*#    - To Corrigan Drain (south of the Jock)
*#    - Primarily Developed (medium density)
*#*****************************************************************************
CONTINUOUS STANDHYD ID=[2], NHYD=["CORRIG"], DT=[5]min, AREA=[149](ha),
                      XIMP=[0.45], TIMP=[0.45], DWF=[0](cms), LOSS=[2],
                      SCS curve number CN=[77],
                      Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                              LGP=[40](m), MNP=[0.25], SCP=[0](min),
                      Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
                              LGI=[997](m), MNI=[0.013], SCI=[0](min),
                      Continuous simulation parameters:
                      IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                      SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                      InterEventTime=[18](hrs),   END=-1

*%-----------------|---------------------------------------------------------------|
*#*****************************************************************************
*#    Corrigan Pond 1
*#    - Rating curve obtained from Barrhaven South MSS modeling
*#    - Tributary Drainage Area to MSS Pond 1 = 145 ha
*#*****************************************************************************
ROUTE RESERVOIR       IDout=[5],   NHYD=["MS_P1"],  IDin=[2],
```

```
                    RDT=[5](min),
                          TABLE of ( OUTFLOW-STORAGE ) values
                                      (cms) - (ha-m)
                                    [   0.0 ,  0.0 ]
                                    [   0.06 , 0.58]
                                    [   -1  ,  -1  ]  (max twenty pts)
                          IDovf=[4], NHYDovf=["P1-OVF"]
*%-----------------|-------------------------------------------------------------|
ADD HYD             IDsum=[ 3 ], NHYD=["SN_CO"], IDs to add=[1,4,5]
*%-----------------|-------------------------------------------------------------|
SAVE HYD            ID=[ 3 ],   # OF PCYCLES=[-1],  ICASEsh=[1]
                    HYD_COMMENT=["Total Flows at Corrigan Drain"]
*%-----------------|-------------------------------------------------------------|
*#
*# Hydrograph from Corrigan Drain routed to Jockvale Road
*# Channel X-Section obtained from RVCA Hydraulic Model - Station 2462
*#
ROUTE CHANNEL       IDout=[1], NHYD=["N_MI"] ,IDin=[3] ,
                    RDT=[5](min),
                    CHLGTH=[580](m),  CHSLOPE=[0.4448](%),
                                        FPSLOPE=[0.4448](%),
                    SECNUM=[1.0],       NSEG=[3]
                    ( SEGROUGH, SEGDIST (m))=
                      [0.075,-17.72
                      -0.045,17.72
                      0.075,80.62] NSEG times
                    ( DISTANCE (m), ELEVATION (m))=
                    [-83.32, 90.00]
                    [-81.36, 89.50]
                    [-79.12, 89.00]
                    [-76.13, 88.50]
                    [-20.46, 88.00]
                    [-19.36, 87.50]
                    [-18.51, 87.00]
                    [-17.72, 86.50]
                    [-11.95, 85.24]
                    [-0.11, 85.12]
                    [11.49, 85.20]
                    [17.72, 86.50]
                    [19.74, 87.00]
                    [21.22, 87.50]
                    [22.68, 88.00]
                    [24.28, 88.50]
                    [26.79, 89.00]
                    [71.98, 90.00]
                    [80.62, 90.50]
*%-----------------|-------------------------------------------------------------|
*#*******************************************************************************
*#    Catchment MILLS
*#    - To SWM Facility north of the Jock
*#    - Primarily residental development
*#*******************************************************************************
CONTINUOUS STANDHYD ID=[2], NHYD=["MILLS"], DT=[5]min, AREA=[139](ha),
                    XIMP=[0.38], TIMP=[0.38], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[74],
                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
                            LGI=[963](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[18](hrs),   END=-1

*%-----------------|-------------------------------------------------------------|
*#*******************************************************************************
```

```
*#    Chapman Mills SWM Pond
*#    - Rating curve obtained from CCL hydraulic modeling
*#******************************************************************************
ROUTE RESERVOIR     IDout=[5],   NHYD=["MILL_P"],  IDin=[2],
                    RDT=[5](min),
                          TABLE of ( OUTFLOW-STORAGE ) values
                                      (cms) - (ha-m)
                                    [   0.0 ,  0.0 ]
                                    [   0.01 , 0.01]
                                    [   0.05 , 0.06]
                                    [   0.09 , 0.11]
                                    [   0.13 , 0.15]
                                    [   0.18 , 0.19]
                                    [   0.28 , 0.28]
                                    [   0.37 , 0.34]
                                    [   0.45 , 0.40]
                                    [   0.51 , 0.44]
                                    [   0.56 , 0.47]
                                    [   0.64 , 0.52]
                                    [   0.76 , 0.59]
                                    [   0.86 , 0.65]
                                    [   1.09 , 0.78]
                                    [   1.44 , 0.96]
                                    [   3.18 , 1.84]
                                    [   4.05 , 2.31]
                                    [   -1  ,  -1  ]  (max twenty pts)
                          IDovf=[4], NHYDovf=["MIL-OV"]
*%-----------------|------------------------------------------------------------|
ADD HYD             IDsum=[ 3 ], NHYD=["SN_MI"], IDs to add=[1,4,5]
*%-----------------|------------------------------------------------------------|
SAVE HYD            ID=[ 3 ],   # OF PCYCLES=[-1],  ICASEsh=[1]
                    HYD_COMMENT=["Total Flows at Jockvale Road"]
*%-----------------|------------------------------------------------------------|
*#
*# Hydrograph from Jockvale Road routed to Heart's Desire
*# Channel X-Section obtained from RVCA Hydraulic Model - Station 689
*#
ROUTE CHANNEL       IDout=[1], NHYD=["N_DE"] ,IDin=[3] ,
                    RDT=[5](min),
                    CHLGTH=[1962](m),  CHSLOPE=[0.2227](%),
                                        FPSLOPE=[0.2227](%),
                    SECNUM=[1.0],       NSEG=[3]
                    ( SEGROUGH, SEGDIST (m))=
                      [0.075,-17.56
                      -0.045,18.27
                      0.075,67.59] NSEG times
                    ( DISTANCE (m), ELEVATION (m))=
                    [-111.59, 88.00]
                    [-102.58, 87.50]
                    [-96.20, 87.00]
                    [-90.04, 86.50]
                    [-84.02, 86.00]
                    [-77.54, 85.50]
                    [-54.07, 85.00]
                    [-39.43, 84.50]
                    [-28.30, 84.00]
                    [-24.12, 83.50]
                    [-22.30, 83.00]
                    [-20.55, 82.50]
                    [-17.56, 82.00]
                    [-12.63, 81.22]
                    [-0.11, 80.75]
                    [11.55, 81.22]
                    [18.27, 82.00]
                    [19.82, 82.50]
                    [22.48, 83.00]
```

```
                    [27.90, 83.50]
                    [29.31, 84.00]
                    [30.81, 84.50]
                    [32.51, 85.00]
                    [34.24, 85.50]
                    [36.34, 86.00]
                    [41.65, 86.50]
                    [62.64, 87.00]
                    [65.14, 87.50]
                    [67.59, 88.00]
*%-----------------|-----------------------------------------------------------|
*#*****************************************************************************
*#    Catchment DESIRE
*#    - To Jock River (north of the Jock)
*#    - Rural-estate subdivision (Heart's Desire Community)
*#*****************************************************************************
CONTINUOUS STANDHYD ID=[2], NHYD=["DESIRE"], DT=[5]min, AREA=[24](ha),
                    XIMP=[0.25], TIMP=[0.25], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[77],
                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
                            LGI=[400](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[18](hrs),   END=-1

*%-----------------|-----------------------------------------------------------|
*#*****************************************************************************
*#    Catchment JOCKVA
*#    - To Jockvale SWM Facility
*#    - Residential development & golf course
*#*****************************************************************************
CONTINUOUS STANDHYD ID=[3], NHYD=["JOCKVA"], DT=[5]min, AREA=[252](ha),
                    XIMP=[0.50], TIMP=[0.50], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[74],
                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
                            LGI=[1296](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[18](hrs),   END=-1

*%-----------------|-----------------------------------------------------------|
*#*****************************************************************************
*#    Jockvale SWM Facility
*#    - Rating curve obtained from Jockvale Servicing Study (CCL 1999)
*#*****************************************************************************
ROUTE RESERVOIR     IDout=[5],   NHYD=["JOCK_P"],  IDin=[3],
                    RDT=[5](min),
                          TABLE of ( OUTFLOW-STORAGE ) values
                                      (cms) - (ha-m)
                                    [   0.0 ,  0.0 ]
                                    [   0.27 , 0.03]
                                    [   0.28 , 0.55]
                                    [   0.29 , 1.14]
                                    [   0.30 , 1.80]
                                    [   0.31 , 2.32]
                                    [   1.12 , 2.87]
                                    [   2.92 , 3.45]
                                    [   4.64 , 4.07]
                                    [   6.69 , 4.72]
                                    [   9.02 , 5.39]
```

```
                                [   11.62 , 6.10]
                                [   14.42 , 6.85]
                                [   17.45 , 7.62]
                                [   20.69 , 8.44]
                                [   24.08 , 9.28]
                                [   27.68 , 10.17]
                                [   -1  ,  -1  ]  (max twenty pts)
                      IDovf=[4], NHYDovf=["JO-OVF"]
*%-----------------|-------------------------------------------------------------|
ADD HYD              IDsum=[ 3 ], NHYD=["SN_DE"], IDs to add=[1,2,4,5]
*%-----------------|-------------------------------------------------------------|
SAVE HYD             ID=[ 3 ],   # OF PCYCLES=[-1],  ICASEsh=[1]
                     HYD_COMMENT=["Total Flows at Heart's Desire"]
*%-----------------|-------------------------------------------------------------|
*#
*# Hydrograph from Heart's Desire routed to Rideau River
*# Channel X-Section obtained from RVCA Hydraulic Model - Station 0
*#
ROUTE CHANNEL        IDout=[1], NHYD=["N1"] ,IDin=[3] ,
                     RDT=[5](min),
                     CHLGTH=[563](m),  CHSLOPE=[0.9668](%),
                                         FPSLOPE=[0.9668](%),
                     SECNUM=[1.0],       NSEG=[3]
                     ( SEGROUGH, SEGDIST (m))=
                       [0.075,-30.20
                       -0.045,30.20
                       0.075,168.81] NSEG times
                     ( DISTANCE (m), ELEVATION (m))=
                     [-170.17, 86.00]
                     [-164.75, 85.50]
                     [-158.08, 85.00]
                     [-113.12, 82.00]
                     [-98.46, 81.50]
                     [-92.24, 81.00]
                     [-86.88, 80.50]
                     [-81.54, 80.00]
                     [-74.36, 79.50]
                     [-63.54, 79.00]
                     [-39.23, 78.50]
                     [-34.51, 78.00]
                     [-33.01, 77.50]
                     [-30.20, 77.00]
                     [-13.42, 76.18]
                     [-1.14, 76.09]
                     [17.06, 76.18]
                     [30.20, 77.00]
                     [32.95, 77.50]
                     [34.06, 78.00]
                     [35.11, 78.50]
                     [36.32, 79.00]
                     [37.74, 79.50]
                     [48.48, 81.50]
                     [49.25, 82.00]
                     [55.61, 84.50]
                     [57.09, 85.00]
                     [59.51, 85.50]
                     [64.34, 86.00]
                     [66.30, 86.00]
                     [76.71, 86.50]
                     [101.83, 86.50]
                     [119.73, 87.00]
                     [142.04, 87.50]
                     [168.81, 88.00]
*%-----------------|-------------------------------------------------------------|
*#*******************************************************************************
*#    Catchment S-2
```

```
*#    - To Jock River (north and south)
*#    - Undeveloped floodplain and river
*#********************************************************************************
CONTINUOUS NASHYD    ID=[2], NHYD=["S-2"], DT=[5]min, AREA=[102](ha),
                     DWF=[0](cms), CN/C=[72],  IA=[4.67](mm),
                     N=[3], TP=[0.40]hrs,
                     Continuous simulation parameters:
                     IaRECper=[4](hrs),
                     SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                     InterEventTime=[12](hrs)
                     Baseflow simulation parameters:
                     BaseFlowOption=[1] ,
                     InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                     VHydCond=[0.055](mm/hr),   END=-1

*%-----------------|-----------------------------------------------------------|
ADD HYD              IDsum=[ 3 ], NHYD=["SN_N1"], IDs to add=[1,2]
*%-----------------|-----------------------------------------------------------|
SAVE HYD             ID=[ 3 ],   # OF PCYCLES=[-1],  ICASEsh=[1]
                     HYD_COMMENT=["Total Flows at Rideau River"]
*%-----------------|-----------------------------------------------------------|
*%  5 yr, 24 hr SCS storm based on OTTAWA CDA IDF Curves
START                TZERO=[0.0],  METOUT=[2],  NSTORM=[1],  NRUN=[005]
*%                    ["C24SC005.stm"] <--storm filename, one per line for NSTORM time
*%-----------------|-----------------------------------------------------------|
*%  10 yr, 24 hr SCS storm based on OTTAWA CDA IDF Curves
*%START               TZERO=[0.0],  METOUT=[2],  NSTORM=[1],  NRUN=[010]
*%                    ["C24SC010.stm"] <--storm filename, one per line for NSTORM time
*%-----------------|-----------------------------------------------------------|
*%  25 yr, 24 hr SCS storm based on OTTAWA CDA IDF Curves
START                TZERO=[0.0],  METOUT=[2],  NSTORM=[1],  NRUN=[025]
*%                    ["C24SC025.stm"] <--storm filename, one per line for NSTORM time
*%-----------------|-----------------------------------------------------------|
*%  50 yr, 24 hr SCS storm based on OTTAWA CDA IDF Curves
*%START               TZERO=[0.0],  METOUT=[2],  NSTORM=[1],  NRUN=[050]
*%                    ["C24SC050.stm"] <--storm filename, one per line for NSTORM time
*%-----------------|-----------------------------------------------------------|
*%  100 yr, 24 hr SCS storm based on OTTAWA CDA IDF Curves
START                TZERO=[0.0],  METOUT=[2],  NSTORM=[1],  NRUN=[100]
*%                    ["C24SC100.stm"] <--storm filename, one per line for NSTORM time
*%-----------------|-----------------------------------------------------------|

*################################################################################
FINISH
```

```
===========================================================================
 SSSSS  W   W  M   M  H   H  Y   Y  M   M   OOO       999   999  =========
 S      W W W  MM MM  H   H   Y Y   MM MM  O   O     9   9  9   9
 SSSSS  W W W  M M M  HHHHH    Y    M M M  O   O ##  9   9  9   9 Ver5 Beta
     S   W W   M   M  H   H    Y    M   M  O   O      9999   9999 Sept 2000
 SSSSS   W W   M   M  H   H    Y    M   M   OOO          9      9 =========
                                                     9   9  9   9 # 3783815
      StormWater Management HYdrologic Model          999   999  =========
 **************************************************************************
 *************************** SWMHYMO Ver/5 Beta **************************
 *******  A single event and continuous hydrologic simulation model  *******
 *******     based on the principles of HYMO and its successors      *******
 *******                OTTHYMO-83 and OTTHYMO-89.                   *******
 **************************************************************************
 ******* Distributed by:  J.F. Sabourin and Associates Inc.           *******
 *******                  Ottawa,  Ontario: (613) 727-5199           *******
 *******                  Gatineau, Quebec: (819) 243-6858           *******
 *******                  E-Mail: swmhymo@jfsa.Com                   *******
 **************************************************************************
 ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
 +++++++ Licensed user: Stantec - Ottawa - 604                     +++++++
 +++++++                Ottawa                SERIAL#:3783815       +++++++
 ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
 **************************************************************************
 *******            ++++++ PROGRAM ARRAY DIMENSIONS ++++++           *******
 *******            Maximum value for ID numbers  :    10            *******
 *******            Max. number of rainfall points:  52750           *******
 *******            Max. number of flow points    :  52750           *******
 **************************************************************************
 *** DESCRIPTION SUMMARY TABLE HEADERS (units depend on METOUT in START) ***
 ***--------------------------------------------------------------------***
 ***     ID:  Hydrograph IDentification numbers, (1-10).                ***
 ***   NHYD:  Hydrograph reference numbers, (6 digits or characters).   ***
 ***   AREA:  Drainage area associated with hydrograph, (ac.) or (ha.). ***
 ***  QPEAK:  Peak flow of simulated hydrograph, (ft^3/s) or (m^3/s).   ***
 *** TpeakDate_hh:mm is the date and time of the peak flow.             ***
 ***   R.V.:  Runoff Volume of simulated hydrograph, (in) or (mm).      ***
 ***   R.C.:  Runoff Coefficient of simulated hydrograph, (ratio).      ***
 ***      *:  see WARNING or NOTE message printed at end of run.        ***
 ***     **:  see  ERROR  message printed at end of run.                ***
 **************************************************************************
 **************************************************************************
:::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::::
 **************************************************************************
 ********************   S U M M A R Y   O U T P U T   ********************
 **************************************************************************
 *       DATE: 2006-11-15     TIME: 14:33:15     RUN COUNTER: 000132      *
 **************************************************************************
 * Input   filename: C:\Navin\OCTOBE~1\CONTIN~1\SMR_POST\SMR_POST.dat      *
 * Output  filename: C:\Navin\OCTOBE~1\CONTIN~1\SMR_POST\SMR_POST.out      *
 * Summary filename: C:\Navin\OCTOBE~1\CONTIN~1\SMR_POST\SMR_POST.sum      *
 * User comments:                                                         *
 * 1:______________________________________________________________________*
 * 2:______________________________________________________________________*
 * 3:______________________________________________________________________*
 **************************************************************************
#***************************************************************************
#  Project Name: [Jock River Reach 1 SubWatershed Study]Project #: [160400414]
#  Date        : October 2006
#  Modeller    : [Navin Gautam/ Original by Ana M Paerez]
#  Company     : Stantec.
#  License #   :  3824306
#***************************************************************************
  ** END OF RUN :   1
****************************************************************************
 RUN:COMMAND#
 002:0001-------------------------------------------------------------------
     START
      [TZERO =    .00 hrs on        0]
      [METOUT=   2    (1=imperial, 2=metric output)]
      [NSTORM=   1 ]
      [NRUN  =   2 ]
#***************************************************************************
#  Project Name: [Jock River Reach 1 SubWatershed Study]Project #: [160400414]
#  Date        : October 2006
#  Modeller    : [Navin Gautam/ Original by Ana M Paerez]
#  Company     : Stantec.
#  License #   :  3824306
#***************************************************************************
#-----------------|---------------------------------------------------------|
 002:0002--------------------------------------------------------------------
     READ STORM
      Filename = storm.001
      Comment  = Pluie SCS de 24 hres 1:2 ans pour Ottawa CDA
      [SDT=10.00:SDUR=  24.00:PTOT=  45.51]
 002:0003--------------------------------------------------------------------
     MODIFY STORM
      [RFACT=  1.00:TSHIFT= 960.00 min]
      [SDT=10.00:SDUR=  40.00:PTOT=  45.51]
 002:0004--------------------------------------------------------------------
     DEFAULT VALUES
      Filename = C:\Navin\OCTOBE~1\CONTIN~1\SMR_POST\MODIFIED.VAL
      ICASEdv  = 1 (read and print data)
      FileTitle= File comment: [2005 City of Ottawa Sewer Design Guideline]
                 PARAMETERS USED IN THE DESIGN STANDHYD COMMAND FOR OTTAWA.
      Horton's infiltration equation parameters:
      [Fo= 76.20 mm/hr] [Fc=13.20 mm/hr] [DCAY= 4.14 /hr] [F=  .00 mm]
      Parameters for PERVIOUS surfaces in STANDHYD:
      [IAper=   4.67 mm] [LGP=40.00 m] [MNP= .250]
      Parameters for IMPERVIOUS surfaces in STANDHYD:
      [IAimp=   1.57 mm] [CLI= 1.50]   [MNI= .013]
      Parameters used in NASHYD:
      [Ia=   2.50 mm] [N= 3.00]
 002:0005--------------------------------------------------------------------
     COMPUTE API
      [APIini= 50.00: APIkdy= .8500: APIkdt= .9989]
      {APImax= 80.12: APIavg= 56.74: APImin= 44.87}
#***************************************************************************
#
#            JOCK RIVER REACH 1 SUBWATERSHED STUDY DISCRETIZED MODEL
#                    PROPOSED CONDITIONS DESIGN STORM MODEL (SUMMER)
#
# Version: Draft Final Report, October 2006
# Revision History
# -Draft Interim Condition Report, Nov. 2005
#***************************************************************************
# Assumptions
# - All catchments are assumed to be developed except S-1, S-2, and SW-1a
# - SWM facilities are modeled
# - Rating curves were estimated based on existing reports and modeling for the
#   proposed SWM facilities
# - The rating curve for the existing Kennedy Burnett SWM Facility was obtained
#   the Urban Runoff Treatment in the Kennedy Burnett Settling Pond (URTKBP)- R
#   Municipality of Ottawa Carleton, March 1983
# - River routing modeled
# - River cross sections obtained from RVCA's HEC-RAS hydraulic model
#-----------------|---------------------------------------------------------|
# Parameters
# - Design Storms: 2,5,10,25,50 &1 00yr events: 24hr SCS (DT=10min)-model compa
# - Impervious area weighted based on: rural subdivision @20%, urban @55%
# - NRCS(SCS) CN based on landuse (airphoto) and soil type (base mapping)
# - Time to peak using Uplands Method
#-----------------|---------------------------------------------------------|
#***************************************************************************
#Read hydrograph upstream of N2 from RVCA Jock R. floodrisk watershed modeling
#***************************************************************************
 002:0006---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     READ HYD           01:S_N2   52483.01   45.789 No_date   33:50   12.75  n/a
      Filename = C:\Navin\OCTOBE~1\CONTIN~1\SMR_POST\H-S_N2.002
      Comment  = N2
#
# Hydrograph from Node 2 routed to Node 416
# Channel X-Section obtained from RVCA Hydraulic Model - Station 9025
#
 002:0007---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 01:S_N2   52483.01   45.789 No_date   33:50   12.75  n/a
      [RDT=10.00] out<- 04:N_416  52483.01   44.971 No_date   36:30   12.75  n/a
      [L/S/n= 2327./ .050/.055]
      {Vmax=  .575:Dmax= 2.199}
#***************************************************************************
#    Catchment SW-1a
#    - Portion of RVCA catchment SW_1 outside of Reach 1 subwatershed
#    - Undeveloped agricultural land
#***************************************************************************
 002:0008---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CONTINUOUS NASHYD  02:SW_1a    546.00    1.904 No_date   31:20   13.01 .286
      [CN= 72.0: N= 3.00]
      [Tp= 2.79:DT= 5.00]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
 002:0009---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD            04:N_416  52483.01   44.971 No_date   36:30   12.75  n/a
                      + 02:SW_1a    546.00    1.904 No_date   31:20   13.01  n/a
      [DT= 5.00]  SUM=  03:SN_416 53029.01   46.118 No_date   34:50   12.75  n/a
 002:0010---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           03:SN_416 53029.01   46.118 No_date   34:50   12.75  n/a
      fname :C:\Navin\OCTOBE~1\CONTIN~1\SMR_POST\H-SN_416.002
      remark:Total Flows at Highway 416
#
# Hydrograph from Node 416 routed to Node at Okeefe drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 7245
#
 002:0011---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 03:SN_416 53029.01   46.118 No_date   34:50   12.75  n/a
      [RDT= 5.00] out<- 01:N_OK   53029.01   46.108 No_date   34:45   12.75  n/a
      [L/S/n=  497./ .302/.055]
      {Vmax= 1.185:Dmax= 1.869}
#***************************************************************************
#    Catchment OKEEFE
#    - To O'Keefe drain (north of the Jock)
#    - Developed with assumed 43% imp.
#***************************************************************************
 002:0012---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CONTINUOUS STANDHYD02:OKEEFE   448.00   13.801 No_date   28:15   25.18 .553
      [XIMP=.43:TIMP=.43]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1728.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
#***************************************************************************
#    Okeefe Pond
#    - Rating curve obtained assuming 40m3/ha in 24 hours for quality control
#   and a ratio of the catchment area to the West Clarke pond rating curve
#      from the MSS for the next coordinates
#***************************************************************************
 002:0013---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE RESERVOIR -> 02:OKEEFE   448.00   13.801 No_date   28:15   25.18  n/a
      [RDT= 5.00] out<- 04:P_OKE    116.46     .200 No_date   27:45   25.18  n/a
            overflow <= 09:ok-OVF   331.54   13.458 No_date   28:20   25.18  n/a
     {MxStoUsed=.1720E+01, TotOvfVol=.8349E+01, N-Ovf=    2, TotDurOvf=   13.hrs}
 002:0014---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD            01:N_OK   53029.01   46.108 No_date   34:45   12.75  n/a
                      + 04:P_OKE    116.46     .200 No_date   27:45   25.18  n/a
                      + 09:ok-OVF   331.54   13.458 No_date   28:20   25.18  n/a
      [DT= 5.00]  SUM=  03:SN_OK  53477.02   46.839 No_date   34:45   12.85  n/a
 002:0015---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           03:SN_OK  53477.02   46.839 No_date   34:45   12.85  n/a
      fname :C:\Navin\OCTOBE~1\CONTIN~1\SMR_POST\H-SN_OK.002
      remark:Total Flows at Okeefe Drain
#
# Hydrograph from Node Okeefe routed to Node at Foster Drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 6215
#
 002:0016---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 03:SN_OK  53477.02   46.839 No_date   34:45   12.85  n/a
      [RDT= 5.00] out<- 01:N_FO   53477.02   46.817 No_date   34:50   12.85  n/a
      [L/S/n= 1183./ .076/.035]
      {Vmax= 1.826:Dmax=  .010}
#***************************************************************************
#    Catchment FOSTER
#    - To Foster ditch (north of the Jock)
#    - Partially developed (medium density); remaining agricultural
#***************************************************************************
 002:0017---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CONTINUOUS STANDHYD02:FOSTER   373.00   14.534 No_date   28:15   28.56 .628
      [XIMP=.55:TIMP=.55]
      [LOSS= 2 :CN= 74.0]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1577.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 36.67: SMAX=244.49: SK= .010]
#***************************************************************************
#    Foster Pond
#    - Rating curve obtained assuming 40m3/ha in 24 hours for quality control
#   and a ratio of the catchment area to the West Clarke pond rating curve
#      from the MSS for the next coordinates
#***************************************************************************
 002:0018---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE RESERVOIR -> 02:FOSTER   373.00   14.534 No_date   28:15   28.56  n/a
      [RDT= 5.00] out<- 04:P_FOS    102.35     .200 No_date   27:35   28.56  n/a
            overflow <= 09:FO-OVF   270.65   14.097 No_date   28:20   28.56  n/a
     {MxStoUsed=.1720E+01, TotOvfVol=.7731E+01, N-Ovf=    3, TotDurOvf=   13.hrs}
 002:0019---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD            01:N_FO   53477.02   46.817 No_date   34:50   12.85  n/a
                      + 04:P_FOS    102.35     .200 No_date   27:35   28.56  n/a
                      + 09:FO-OVF   270.65   14.097 No_date   28:20   28.56  n/a
      [DT= 5.00]  SUM=  03:SN_FO  53850.02   47.455 No_date   34:50   12.96  n/a
 002:0020---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           03:SN_FO  53850.02   47.455 No_date   34:50   12.96  n/a
      fname :C:\Navin\OCTOBE~1\CONTIN~1\SMR_POST\H-SN_FO.002
      remark:Total Flows at Foster Drain
#
# Hydrograph from Node Foster routed to Node at Cedarview Road
# Channel X-Section obtained from RVCA Hydraulic Model - Station 6016
#
 002:0021---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 03:SN_FO  53850.02   47.455 No_date   34:50   12.96  n/a
      [RDT= 5.00] out<- 01:N_CE   53850.02   47.455 No_date   34:50   12.96  n/a
      [L/S/n=  159./ .082/.035]
      {Vmax= 3.197:Dmax=  .002}
#***************************************************************************
#    Catchment S-1
#    - To Jock River (north and south of Jock)
#    - Primarily agricultural fields; portion of sand quarry
#***************************************************************************
 002:0022---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CONTINUOUS NASHYD  02:S-1      245.00    1.962 No_date   29:10   14.83 .326
      [CN= 77.0: N= 3.00]
      [Tp= 1.10:DT= 5.00]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
 002:0023---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD            01:N_CE   53850.02   47.455 No_date   34:50   12.96  n/a
                      + 02:S-1      245.00    1.962 No_date   29:10   14.83  n/a
      [DT= 5.00]  SUM=  03:SN_CE  54095.02   47.809 No_date   34:50   12.97  n/a
 002:0024---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           03:SN_CE  54095.02   47.809 No_date   34:50   12.97  n/a
      fname :C:\Navin\OCTOBE~1\CONTIN~1\SMR_POST\H-SN_CE.002
      remark:Total Flows at Cedarview Road
#
# Hydrograph from Node Cedarview Road routed to Node at West Clarke Drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 5002
#
 002:0025---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 03:SN_CE  54095.02   47.809 No_date   34:50   12.97  n/a
      [RDT= 5.00] out<- 01:N_WC   54095.02   47.793 No_date   35:00   12.97  n/a
      [L/S/n=  825./ .010/.035]
      {Vmax= 1.282:Dmax=  .001}
#***************************************************************************
#    Catchment W_CLAR
#    - To West Clarke Drain (south of the Jock)
#    - Subdivision with 43% imp. as per Barrhaven South MSS
#***************************************************************************
 002:0026---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CONTINUOUS STANDHYD02:W_CLAR   243.00   10.023 No_date   28:05   24.81 .545
      [XIMP=.43:TIMP=.43]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI=1273.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
#***************************************************************************
#    West Clarke Pond 2
#    - Rating curve obtained from Barrhaven South MSS modeling
#    - Tributary Drainage Area to MSS Pond 2 = 241 ha
#***************************************************************************
 002:0027---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE RESERVOIR -> 02:W_CLAR   243.00   10.023 No_date   28:05   24.81  n/a
      [RDT= 5.00] out<- 08:MS_P2     64.85     .110 No_date   27:35   24.81  n/a
            overflow <= 09:P2-OVF   178.15    9.775 No_date   28:10   24.81  n/a
     {MxStoUsed=.9597E+00, TotOvfVol=.4421E+01, N-Ovf=    2, TotDurOvf=   13.hrs}
 002:0028---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD            08:MS_P2     64.85     .110 No_date   27:35   24.81  n/a
                      + 09:P2-OVF   178.15    9.775 No_date   28:10   24.81  n/a
                      + 01:N_WC   54095.02   47.793 No_date   35:00   12.97  n/a
      [DT= 5.00]  SUM=  04:SN_WC  54338.02   48.170 No_date   35:00   13.02  n/a
 002:0029---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           04:SN_WC  54338.02   48.170 No_date   35:00   13.02  n/a
      fname :C:\Navin\OCTOBE~1\CONTIN~1\SMR_POST\H-SN_WC.002
      remark:Total Flows at West Clarke Pond Outlet
# Hydrograph from Node West Clarke routed to Node at Kennedy - Burnett Drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 4534
#
 002:0030---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 04:SN_WC  54338.02   48.170 No_date   35:00   13.02  n/a
      [RDT= 5.00] out<- 01:N_KB   54338.02   48.099 No_date   34:45   13.02  n/a
      [L/S/n= 1020./ .050/.035]
      {Vmax=  .845:Dmax= 2.412}
#***************************************************************************
#    Catchment KEN_BU
#    - To Kennedy-Burnett SWM Facility
#    - Outlets to Fraser-Clarke drain (north of the Jock)
#    - Medium density residential subdivision
#***************************************************************************
 002:0031---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CONTINUOUS STANDHYD02:KEN_BU   281.00   14.015 No_date   28:05   28.17 .619
      [XIMP=.55:TIMP=.55]
      [LOSS= 2 :CN= 71.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI=1369.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 41.38: SMAX=275.84: SK= .010]
#***************************************************************************
#   Existing Kennedy-Burnett SWM Facility
#    - Rating curve obtained from URTKBP
#    - Tributary Drainage Area to Pond = 160 ha
#***************************************************************************
 002:0032---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE RESERVOIR -> 02:KEN_BU   281.00   14.015 No_date   28:05   28.17  n/a
      [RDT= 5.00] out<- 05:KEN_P    208.79    1.150 No_date   28:10   28.17  n/a
            overflow <= 06:KEN-OV    72.21   12.623 No_date   28:10   28.17  n/a
     {MxStoUsed=.2330E+01, TotOvfVol=.2034E+01, N-Ovf=    4, TotDurOvf=    2.hrs}
#***************************************************************************
#    Catchment FRASER
#    - To Fraser-Clarke drain (north of the Jock)
#    - Developed land with assumed 43% imp.
#***************************************************************************
```

```
 002:0033---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CONTINUOUS STANDHYD07:FRASER    90.00    2.860 No_date   28:05   20.31 .446
      [XIMP=.25:TIMP=.25]
      [LOSS= 2 :CN= 80.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 775.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 26.32: SMAX=175.50: SK= .010]
 002:0034---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE RESERVOIR -> 07:FRASER    90.00    2.860 No_date   28:05   20.31  n/a
      [RDT= 5.00] out<- 08:MS_P2     28.48     .040 No_date   28:00   20.31  n/a
            overflow <= 09:P2-OVF    61.52    2.795 No_date   28:05   20.31  n/a
     {MxStoUsed=.3600E+00, TotOvfVol=.1250E+01, N-Ovf=    2, TotDurOvf=   13.hrs}
 002:0035---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD            05:KEN_P    208.79    1.150 No_date   28:10   28.17  n/a
                      + 06:KEN-OV    72.21   12.623 No_date   28:10   28.17  n/a
                      + 08:MS_P2     28.48     .040 No_date   28:00   20.31  n/a
                      + 09:P2-OVF    61.52    2.795 No_date   28:05   20.31  n/a
                      + 01:N_KB   54338.02   48.099 No_date   34:45   13.02  n/a
      [DT= 5.00]  SUM=  04:SN_KB  54709.01   49.195 No_date   34:45   13.11  n/a
 002:0036---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           04:SN_KB  54709.01   49.195 No_date   34:45   13.11  n/a
      fname :C:\Navin\OCTOBE~1\CONTIN~1\SMR_POST\H-SN_KB.002
      remark:Total Flows at Ken-Burnett Outlet
# Hydrograph from Node Kennedy - Burnett Drain to Node Todd Drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 3633
#
 002:0037---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 04:SN_KB  54709.01   49.195 No_date   34:45   13.11  n/a
  *   [RDT= 5.00] out<- 01:N_TO   54709.01   49.001 No_date   36:15   13.11  n/a
      [L/S/n=  650./ .050/.035]
      {Vmax=  .281:Dmax=  .999}
#*******************************************************************************
#    Catchment TODD
#    - To Todd Drain (south of the Jock)
#    - Subdivision with 43% imp. as per Barrhaven South MSS
#*******************************************************************************
 002:0038---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CONTINUOUS STANDHYD03:TODD     195.00    8.304 No_date   28:05   25.18 .553
      [XIMP=.43:TIMP=.43]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI=1140.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
#*******************************************************************************
#    Todd Pond 3
#    - Rating curve obtained from Barrhaven South MSS modeling
#    - Tributary Drainage Area to MSS Pond 3 = 193 ha
#*******************************************************************************
 002:0039---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE RESERVOIR -> 03:TODD     195.00    8.304 No_date   28:05   25.18  n/a
      [RDT= 5.00] out<- 02:MS_P3     49.78     .080 No_date   27:35   25.18  n/a
            overflow <= 09:P3-OVF   145.22    8.086 No_date   28:10   25.18  n/a
     {MxStoUsed=.7798E+00, TotOvfVol=.3657E+01, N-Ovf=    2, TotDurOvf=   13.hrs}
 002:0040---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD            01:N_TO   54709.01   49.001 No_date   36:15   13.11  n/a
                      + 02:MS_P3     49.78     .080 No_date   27:35   25.18  n/a
                      + 09:P3-OVF   145.22    8.086 No_date   28:10   25.18  n/a
      [DT= 5.00]  SUM=  10:SN_TO  54904.01   49.300 No_date   36:05   13.16  n/a
 002:0041---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           10:SN_TO  54904.01   49.300 No_date   36:05   13.16  n/a
      fname :C:\Navin\OCTOBE~1\CONTIN~1\SMR_POST\H-SN_TO.002
      remark:Total Flows at Todd Drain
#
# Hydrograph from Todd Drain routed to Corrigan Drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 2462
#
 002:0042---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 10:SN_TO  54904.01   49.300 No_date   36:05   13.16  n/a
  *   [RDT= 5.00] out<- 01:N_TO   54904.01   49.134 No_date   36:45   13.16  n/a
      [L/S/n=  280./ .033/.045]
      {Vmax=  .639:Dmax= 2.378}
#*******************************************************************************
#    Catchment CORRIG
#    - To Corrigan Drain (south of the Jock)
#    - Primarily Developed (medium density)
#*******************************************************************************
 002:0043---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CONTINUOUS STANDHYD02:CORRIG   149.00    6.811 No_date   28:05   25.84 .568
      [XIMP=.45:TIMP=.45]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 997.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
#*******************************************************************************
#    Corrigan Pond 1
#    - Rating curve obtained from Barrhaven South MSS modeling
#    - Tributary Drainage Area to MSS Pond 1 = 145 ha
#*******************************************************************************
 002:0044---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE RESERVOIR -> 02:CORRIG   149.00    6.811 No_date   28:05   25.84  n/a
      [RDT= 5.00] out<- 05:MS_P1     36.35     .060 No_date   27:25   25.84  n/a
            overflow <= 04:P1-OVF   112.65    6.599 No_date   28:10   25.84  n/a
     {MxStoUsed=.5800E+00, TotOvfVol=.2911E+01, N-Ovf=    2, TotDurOvf=   13.hrs}
 002:0045---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD            01:N_TO   54904.01   49.134 No_date   36:45   13.16  n/a
                      + 04:P1-OVF   112.65    6.599 No_date   28:10   25.84  n/a
                      + 05:MS_P1     36.35     .060 No_date   27:25   25.84  n/a
      [DT= 5.00]  SUM=  03:SN_CO  55053.02   49.314 No_date   36:40   13.19  n/a
 002:0046---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           03:SN_CO  55053.02   49.314 No_date   36:40   13.19  n/a
      fname :C:\Navin\OCTOBE~1\CONTIN~1\SMR_POST\H-SN_CO.002
      remark:Total Flows at Corrigan Drain
#
# Hydrograph from Corrigan Drain routed to Jockvale Road
# Channel X-Section obtained from RVCA Hydraulic Model - Station 2462
#
 002:0047---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 03:SN_CO  55053.02   49.314 No_date   36:40   13.19  n/a
      [RDT= 5.00] out<- 01:N_MI   55053.02   49.312 No_date   36:45   13.19  n/a
      [L/S/n=  580./ .445/.045]
      {Vmax= 1.456:Dmax= 1.227}
#*******************************************************************************
#    Catchment MILLS
#    - To SWM Facility north of the Jock
#    - Primarily residental development
#*******************************************************************************
 002:0048---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CONTINUOUS STANDHYD02:MILLS    139.00    5.455 No_date   28:05   22.75 .500
      [XIMP=.38:TIMP=.38]
      [LOSS= 2 :CN= 74.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 963.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 36.67: SMAX=244.49: SK= .010]
#*******************************************************************************
#    Chapman Mills SWM Pond
#    - Rating curve obtained from CCL hydraulic modeling
#*******************************************************************************
 002:0049---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE RESERVOIR -> 02:MILLS    139.00    5.455 No_date   28:05   22.75  n/a
      [RDT= 5.00] out<- 05:MILL_P   139.00    1.760 No_date   28:45   22.75  n/a
            overflow <= 04:MIL-OV      .00     .000 No_date    0:00     .00  n/a
     {MxStoUsed=.1123E+01, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
 002:0050---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD            01:N_MI   55053.02   49.312 No_date   36:45   13.19  n/a
                      + 04:MIL-OV      .00     .000 No_date    0:00     .00  n/a
                      + 05:MILL_P   139.00    1.760 No_date   28:45   22.75  n/a
      [DT= 5.00]  SUM=  03:SN_MI  55192.02   49.553 No_date   36:45   13.21  n/a
 002:0051---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           03:SN_MI  55192.02   49.553 No_date   36:45   13.21  n/a
      fname :C:\Navin\OCTOBE~1\CONTIN~1\SMR_POST\H-SN_MI.002
      remark:Total Flows at Jockvale Road
#
# Hydrograph from Jockvale Road routed to Heart's Desire
# Channel X-Section obtained from RVCA Hydraulic Model - Station 689
#
 002:0052---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 03:SN_MI  55192.02   49.553 No_date   36:45   13.21  n/a
      [RDT= 5.00] out<- 01:N_DE   55192.02   49.452 No_date   37:30   13.21  n/a
      [L/S/n= 1962./ .223/.045]
      {Vmax=  .940:Dmax=  .050}
#*******************************************************************************
#    Catchment DESIRE
#    - To Jock River (north of the Jock)
#    - Rural-estate subdivision (Heart's Desire Community)
#*******************************************************************************
 002:0053---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CONTINUOUS STANDHYD02:DESIRE    24.00     .920 No_date   28:00   19.26 .423
      [XIMP=.25:TIMP=.25]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 400.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
#*******************************************************************************
#    Catchment JOCKVA
#    - To Jockvale SWM Facility
#    - Residential development & golf course
#*******************************************************************************
 002:0054---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CONTINUOUS STANDHYD03:JOCKVA   252.00   11.718 No_date   28:05   26.85 .590
      [XIMP=.50:TIMP=.50]
      [LOSS= 2 :CN= 74.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI=1296.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 36.67: SMAX=244.49: SK= .010]
#*******************************************************************************
#    Jockvale SWM Facility
#    - Rating curve obtained from Jockvale Servicing Study (CCL 1999)
#*******************************************************************************
 002:0055---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE RESERVOIR -> 03:JOCKVA   252.00   11.718 No_date   28:05   26.85  n/a
      [RDT= 5.00] out<- 05:JOCK_P   252.00    2.252 No_date   29:10   26.85  n/a
            overflow <= 04:JO-OVF      .00     .000 No_date    0:00     .00  n/a
     {MxStoUsed=.3236E+01, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
 002:0056---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD            01:N_DE   55192.02   49.452 No_date   37:30   13.21  n/a
                      + 02:DESIRE    24.00     .920 No_date   28:00   19.26  n/a
                      + 04:JO-OVF      .00     .000 No_date    0:00     .00  n/a
                      + 05:JOCK_P   252.00    2.252 No_date   29:10   26.85  n/a
      [DT= 5.00]  SUM=  03:SN_DE  55468.01   49.870 No_date   37:20   13.28  n/a
 002:0057---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           03:SN_DE  55468.01   49.870 No_date   37:20   13.28  n/a
      fname :C:\Navin\OCTOBE~1\CONTIN~1\SMR_POST\H-SN_DE.002
      remark:Total Flows at Heart's Desire
#
# Hydrograph from Heart's Desire routed to Rideau River
# Channel X-Section obtained from RVCA Hydraulic Model - Station 0
#
 002:0058---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 03:SN_DE  55468.01   49.870 No_date   37:20   13.28  n/a
      [RDT= 5.00] out<- 01:N1     55468.01   49.870 No_date   37:25   13.28  n/a
      [L/S/n=  563./ .967/.045]
      {Vmax= 2.709:Dmax=  .015}
#*******************************************************************************
#    Catchment S-2
#    - To Jock River (north and south)
#    - Undeveloped floodplain and river
#*******************************************************************************
 002:0059---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CONTINUOUS NASHYD  02:S-2      102.00    1.359 No_date   28:20   13.01 .286
      [CN= 72.0: N= 3.00]
      [Tp=  .40:DT= 5.00]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
 002:0060---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD            01:N1     55468.01   49.870 No_date   37:25   13.28  n/a
                      + 02:S-2      102.00    1.359 No_date   28:20   13.01  n/a
      [DT= 5.00]  SUM=  03:SN_N1  55570.01   49.967 No_date   37:25   13.28  n/a
 002:0061---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           03:SN_N1  55570.01   49.967 No_date   37:25   13.28  n/a
      fname :C:\Navin\OCTOBE~1\CONTIN~1\SMR_POST\H-SN_N1.002
      remark:Total Flows at Rideau River
  ** END OF RUN :   4
 *******************************************************************************
 RUN:COMMAND#
 005:0001------------------------------------------------------------------------
     START
      [TZERO =    .00 hrs on        0]
      [METOUT=   2    (1=imperial, 2=metric output)]
      [NSTORM=   1 ]
      [NRUN  =   5 ]
#*******************************************************************************
#  Project Name: [Jock River Reach 1 SubWatershed Study]Project #: [160400414]
#  Date         : October 2006
#  Modeller     : [Navin Gautam/ Original by Ana M Paerez]
#  Company      : Stantec.
#  License #    :  3824306
#*******************************************************************************
#-----------------|-------------------------------------------------------------|
 005:0002-------------------------------------------------------------------------
     READ STORM
      Filename = storm.001
      Comment  = Pluie SCS de 24 hres 1:5 ans pour Ottawa CDA
      [SDT=10.00:SDUR=  24.00:PTOT=  57.12]
 005:0003-------------------------------------------------------------------------
     MODIFY STORM
      [RFACT=  1.00:TSHIFT= 960.00 min]
      [SDT=10.00:SDUR=  40.00:PTOT=  57.12]
 005:0004-------------------------------------------------------------------------
     DEFAULT VALUES
      Filename = C:\Navin\OCTOBE~1\CONTIN~1\SMR_POST\MODIFIED.VAL
      ICASEdv  = 1 (read and print data)
      FileTitle= File comment: [2005 City of Ottawa Sewer Design Guideline]
                 PARAMETERS USED IN THE DESIGN STANDHYD COMMAND FOR OTTAWA.
      Horton's infiltration equation parameters:
      [Fo= 76.20 mm/hr] [Fc=13.20 mm/hr] [DCAY= 4.14 /hr] [F=  .00 mm]
      Parameters for PERVIOUS surfaces in STANDHYD:
      [IAper=   4.67 mm] [LGP=40.00 m] [MNP= .250]
      Parameters for IMPERVIOUS surfaces in STANDHYD:
      [IAimp=   1.57 mm] [CLI= 1.50]   [MNI= .013]
      Parameters used in NASHYD:
      [Ia=   2.50 mm] [N= 3.00]
 005:0005-------------------------------------------------------------------------
     COMPUTE API
      [APIini= 50.00: APIkdy= .8500: APIkdt= .9989]
      {APImax= 90.83: APIavg= 60.09: APImin= 44.87}
#*******************************************************************************
#
#            JOCK RIVER REACH 1 SUBWATERSHED STUDY DISCRETIZED MODEL
#                    PROPOSED CONDITIONS DESIGN STORM MODEL (SUMMER)
#
# Version: Draft Final Report, October 2006
# Revision History
# -Draft Interim Condition Report, Nov. 2005
#*******************************************************************************
# Assumptions
# - All catchments are assumed to be developed except S-1, S-2, and SW-1a
# - SWM facilities are modeled
# - Rating curves were estimated based on existing reports and modeling for the
#   proposed SWM facilities
# - The rating curve for the existing Kennedy Burnett SWM Facility was obtained
#   the Urban Runoff Treatment in the Kennedy Burnett Settling Pond (URTKBP)- R
#   Municipality of Ottawa Carleton, March 1983
# - River routing modeled
# - River cross sections obtained from RVCA's HEC-RAS hydraulic model
#-----------------|-------------------------------------------------------------|
# Parameters
# - Design Storms: 2,5,10,25,50 &1 00yr events: 24hr SCS (DT=10min)-model compa
# - Impervious area weighted based on: rural subdivision @20%, urban @55%
# - NRCS(SCS) CN based on landuse (airphoto) and soil type (base mapping)
# - Time to peak using Uplands Method
#-----------------|-------------------------------------------------------------|
#*******************************************************************************
#Read hydrograph upstream of N2 from RVCA Jock R. floodrisk watershed modeling
#*******************************************************************************
 005:0006---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     READ HYD           01:S_N2   52483.01   66.413 No_date   33:10   18.30  n/a
      Filename = C:\Navin\OCTOBE~1\CONTIN~1\SMR_POST\H-S_N2.005
      Comment  = N2
#
# Hydrograph from Node 2 routed to Node 416
# Channel X-Section obtained from RVCA Hydraulic Model - Station 9025
#
 005:0007---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 01:S_N2   52483.01   66.413 No_date   33:10   18.30  n/a
      [RDT=10.00] out<- 04:N_416  52483.01   65.031 No_date   34:30   18.30  n/a
      [L/S/n= 2327./ .050/.055]
      {Vmax=  .655:Dmax= 2.644}
#*******************************************************************************
#    Catchment SW-1a
#    - Portion of RVCA catchment SW_1 outside of Reach 1 subwatershed
#    - Undeveloped agricultural land
#*******************************************************************************
 005:0008---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CONTINUOUS NASHYD  02:SW_1a    546.00    3.042 No_date   31:15   18.99 .332
      [CN= 72.0: N= 3.00]
      [Tp= 2.79:DT= 5.00]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
 005:0009---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD            04:N_416  52483.01   65.031 No_date   34:30   18.30  n/a
                      + 02:SW_1a    546.00    3.042 No_date   31:15   18.99  n/a
      [DT= 5.00]  SUM=  03:SN_416 53029.01   67.141 No_date   34:10   18.30  n/a
 005:0010---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           03:SN_416 53029.01   67.141 No_date   34:10   18.30  n/a
      fname :C:\Navin\OCTOBE~1\CONTIN~1\SMR_POST\H-SN_416.005
      remark:Total Flows at Highway 416
#
# Hydrograph from Node 416 routed to Node at Okeefe drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 7245
#
 005:0011---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 03:SN_416 53029.01   67.141 No_date   34:10   18.30  n/a
      [RDT= 5.00] out<- 01:N_OK   53029.01   67.140 No_date   34:10   18.30  n/a
      [L/S/n=  497./ .302/.055]
      {Vmax= 1.349:Dmax= 2.239}
#*******************************************************************************
#    Catchment OKEEFE
#    - To O'Keefe drain (north of the Jock)
#    - Developed with assumed 43% imp.
#*******************************************************************************
 005:0012---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CONTINUOUS STANDHYD02:OKEEFE   448.00   19.045 No_date   28:15   34.02 .596
      [XIMP=.43:TIMP=.43]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1728.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
#*******************************************************************************
#    Okeefe Pond
#    - Rating curve obtained assuming 40m3/ha in 24 hours for quality control
#   and a ratio of the catchment area to the West Clarke pond rating curve
#      from the MSS for the next coordinates
#*******************************************************************************
 005:0013---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE RESERVOIR -> 02:OKEEFE   448.00   19.045 No_date   28:15   34.02  n/a
      [RDT= 5.00] out<- 04:P_OKE     88.43     .200 No_date   27:00   34.02  n/a
            overflow <= 09:ok-OVF   359.57   18.683 No_date   28:20   34.02  n/a
     {MxStoUsed=.1720E+01, TotOvfVol=.1223E+02, N-Ovf=    2, TotDurOvf=   14.hrs}
 005:0014---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD            01:N_OK   53029.01   67.140 No_date   34:10   18.30  n/a
                      + 04:P_OKE     88.43     .200 No_date   27:00   34.02  n/a
```

```
                           +  09:ok-OVF    359.57    18.683 No_date    28:20    34.02  n/a
       [DT= 5.00]  SUM=  03:SN_OK  53477.01    68.150 No_date    34:05    18.44  n/a
 005:0015---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD            03:SN_OK  53477.01    68.150 No_date    34:05    18.44  n/a
      fname :C:\Navin\OCTOBE~1\CONTIN~1\SMR_POST\H-SN_OK.005
      remark:Total Flows at Okeefe Drain
#
# Hydrograph from Node Okeefe routed to Node at Foster Drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 6215
#
 005:0016---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 03:SN_OK  53477.01    68.150 No_date    34:05    18.44  n/a
      [RDT= 5.00] out<- 01:N_FO   53477.01    68.124 No_date    34:20    18.44  n/a
      [L/S/n= 1183./ .076/.035]
      {Vmax= 1.826:Dmax=  .015}
#******************************************************************************
#    Catchment FOSTER
#    - To Foster ditch (north of the Jock)
#    - Partially developed (medium density); remaining agricultural
#******************************************************************************
 005:0017---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CONTINUOUS STANDHYD02:FOSTER   373.00    20.654 No_date    28:10    37.71 .660
      [XIMP=.55:TIMP=.55]
      [LOSS= 2 :CN= 74.0]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1577.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 36.67: SMAX=244.49: SK= .010]
#******************************************************************************
#    Foster Pond
#    - Rating curve obtained assuming 40m3/ha in 24 hours for quality control
#        and a ratio of the catchment area to the West Clarke pond rating curve
#      from the MSS for the next coordinates
#******************************************************************************
 005:0018---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE RESERVOIR -> 02:FOSTER   373.00    20.654 No_date    28:10    37.71  n/a
      [RDT= 5.00] out<- 04:P_FOS     79.61      .200 No_date    26:45    37.71  n/a
            overflow <= 09:FO-OVF   293.39    20.155 No_date    28:15    37.71  n/a
     {MxStoUsed=.1720E+01, TotOvfVol=.1106E+02, N-Ovf=    2, TotDurOvf=   14.hrs}
 005:0019---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD             01:N_FO   53477.01    68.124 No_date    34:20    18.44  n/a
                      +  04:P_FOS     79.61      .200 No_date    26:45    37.71  n/a
                      +  09:FO-OVF   293.39    20.155 No_date    28:15    37.71  n/a
      [DT= 5.00]  SUM=  03:SN_FO  53850.01    68.977 No_date    34:20    18.57  n/a
 005:0020---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD            03:SN_FO  53850.01    68.977 No_date    34:20    18.57  n/a
      fname :C:\Navin\OCTOBE~1\CONTIN~1\SMR_POST\H-SN_FO.005
      remark:Total Flows at Foster Drain
#
# Hydrograph from Node Foster routed to Node at Cedarview Road
# Channel X-Section obtained from RVCA Hydraulic Model - Station 6016
#
 005:0021---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 03:SN_FO  53850.01    68.977 No_date    34:20    18.57  n/a
      [RDT= 5.00] out<- 01:N_CE   53850.01    68.977 No_date    34:20    18.57  n/a
      [L/S/n=  159./ .082/.035]
      {Vmax= 3.197:Dmax=  .003}
#******************************************************************************
#    Catchment S-1
#    - To Jock River (north and south of Jock)
#    - Primarily agricultural fields; portion of sand quarry
#******************************************************************************
 005:0022---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CONTINUOUS NASHYD  02:S-1      245.00     3.163 No_date    29:10    21.69 .380
      [CN= 77.0: N= 3.00]
      [Tp= 1.10:DT= 5.00]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
 005:0023---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD             01:N_CE   53850.01    68.977 No_date    34:20    18.57  n/a
                      +  02:S-1      245.00     3.163 No_date    29:10    21.69  n/a
      [DT= 5.00]  SUM=  03:SN_CE  54095.01    69.514 No_date    34:15    18.58  n/a
 005:0024---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD            03:SN_CE  54095.01    69.514 No_date    34:15    18.58  n/a
      fname :C:\Navin\OCTOBE~1\CONTIN~1\SMR_POST\H-SN_CE.005
      remark:Total Flows at Cedarview Road
#
# Hydrograph from Node Cedarview Road routed to Node at West Clarke Drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 5002
#
 005:0025---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 03:SN_CE  54095.01    69.514 No_date    34:15    18.58  n/a
      [RDT= 5.00] out<- 01:N_WC   54095.01    69.495 No_date    34:25    18.58  n/a
      [L/S/n=  825./ .010/.035]
      {Vmax= 1.282:Dmax=  .001}
#******************************************************************************
#    Catchment W_CLAR
#    - To West Clarke Drain (south of the Jock)
#    - Subdivision with 43% imp. as per Barrhaven South MSS
#******************************************************************************
 005:0026---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CONTINUOUS STANDHYD02:W_CLAR   243.00    13.629 No_date    28:05    33.48 .586
      [XIMP=.43:TIMP=.43]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI=1273.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
#******************************************************************************
#    West Clarke Pond 2
#    - Rating curve obtained from Barrhaven South MSS modeling
#    - Tributary Drainage Area to MSS Pond 2 = 241 ha
#******************************************************************************
 005:0027---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE RESERVOIR -> 02:W_CLAR   243.00    13.629 No_date    28:05    33.48  n/a
      [RDT= 5.00] out<- 08:MS_P2     49.32      .110 No_date    26:50    33.48  n/a
            overflow <= 09:P2-OVF   193.68    13.346 No_date    28:10    33.48  n/a
     {MxStoUsed=.9598E+00, TotOvfVol=.6484E+01, N-Ovf=    2, TotDurOvf=   14.hrs}
 005:0028---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD             08:MS_P2     49.32      .110 No_date    26:50    33.48  n/a
                      +  09:P2-OVF   193.68    13.346 No_date    28:10    33.48  n/a
                      +  01:N_WC   54095.01    69.495 No_date    34:25    18.58  n/a
      [DT= 5.00]  SUM=  04:SN_WC  54338.01    70.010 No_date    34:25    18.65  n/a
 005:0029---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD            04:SN_WC  54338.01    70.010 No_date    34:25    18.65  n/a
      fname :C:\Navin\OCTOBE~1\CONTIN~1\SMR_POST\H-SN_WC.005
      remark:Total Flows at West Clarke Pond Outlet
# Hydrograph from Node West Clarke routed to Node at Kennedy - Burnett Drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 4534
#
 005:0030---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 04:SN_WC  54338.01    70.010 No_date    34:25    18.65  n/a
      [RDT= 5.00] out<- 01:N_KB   54338.01    69.990 No_date    34:30    18.65  n/a
      [L/S/n= 1020./ .050/.035]
      {Vmax=  .946:Dmax= 2.860}
#******************************************************************************
#    Catchment KEN_BU
#    - To Kennedy-Burnett SWM Facility
#    - Outlets to Fraser-Clarke drain (north of the Jock)
#    - Medium density residential subdivision
#******************************************************************************
 005:0031---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CONTINUOUS STANDHYD02:KEN_BU   281.00    18.799 No_date    28:05    37.13 .650
      [XIMP=.55:TIMP=.55]
      [LOSS= 2 :CN= 71.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI=1369.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 41.38: SMAX=275.84: SK= .010]
#******************************************************************************
#   Existing Kennedy-Burnett SWM Facility
#    - Rating curve obtained from URTKBP
#    - Tributary Drainage Area to Pond = 160 ha
#******************************************************************************
 005:0032---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE RESERVOIR -> 02:KEN_BU   281.00    18.799 No_date    28:05    37.13  n/a
      [RDT= 5.00] out<- 05:KEN_P    180.29     1.150 No_date    28:05    37.13  n/a
            overflow <= 06:KEN-OV   100.71    17.309 No_date    28:10    37.13  n/a
     {MxStoUsed=.2330E+01, TotOvfVol=.3739E+01, N-Ovf=    4, TotDurOvf=    3.hrs}
#******************************************************************************
#    Catchment FRASER
#    - To Fraser-Clarke drain (north of the Jock)
#    - Developed land with assumed 43% imp.
#******************************************************************************
 005:0033---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CONTINUOUS STANDHYD07:FRASER    90.00     4.131 No_date    28:05    28.74 .503
      [XIMP=.25:TIMP=.25]
      [LOSS= 2 :CN= 80.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 775.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 26.32: SMAX=175.50: SK= .010]
 005:0034---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE RESERVOIR -> 07:FRASER    90.00     4.131 No_date    28:05    28.74  n/a
      [RDT= 5.00] out<- 08:MS_P2     20.53      .040 No_date    27:45    28.74  n/a
            overflow <= 09:P2-OVF    69.47     4.019 No_date    28:05    28.74  n/a
     {MxStoUsed=.3600E+00, TotOvfVol=.1997E+01, N-Ovf=    2, TotDurOvf=   13.hrs}
 005:0035---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD             05:KEN_P    180.29     1.150 No_date    28:05    37.13  n/a
                      +  06:KEN-OV   100.71    17.309 No_date    28:10    37.13  n/a
                      +  08:MS_P2     20.53      .040 No_date    27:45    28.74  n/a
                      +  09:P2-OVF    69.47     4.019 No_date    28:05    28.74  n/a
                      +  01:N_KB   54338.01    69.990 No_date    34:30    18.65  n/a
      [DT= 5.00]  SUM=  04:SN_KB  54709.01    71.220 No_date    34:30    18.76  n/a
 005:0036---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD            04:SN_KB  54709.01    71.220 No_date    34:30    18.76  n/a
      fname :C:\Navin\OCTOBE~1\CONTIN~1\SMR_POST\H-SN_KB.005
      remark:Total Flows at Ken-Burnett Outlet
# Hydrograph from Node Kennedy - Burnett Drain to Node Todd Drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 3633
#
 005:0037---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 04:SN_KB  54709.01    71.220 No_date    34:30    18.76  n/a
   *  [RDT= 5.00] out<- 01:N_TO   54709.01    70.805 No_date    35:15    18.76  n/a
      [L/S/n=  650./ .050/.035]
      {Vmax=  .281:Dmax=  .999}
#******************************************************************************
#    Catchment TODD
#    - To Todd Drain (south of the Jock)
#    - Subdivision with 43% imp. as per Barrhaven South MSS
#******************************************************************************
 005:0038---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CONTINUOUS STANDHYD03:TODD     195.00    11.301 No_date    28:05    34.02 .596
      [XIMP=.43:TIMP=.43]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI=1140.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
#******************************************************************************
#    Todd Pond 3
#    - Rating curve obtained from Barrhaven South MSS modeling
#    - Tributary Drainage Area to MSS Pond 3 = 193 ha
#******************************************************************************
 005:0039---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE RESERVOIR -> 03:TODD     195.00    11.301 No_date    28:05    34.02  n/a
      [RDT= 5.00] out<- 02:MS_P3     37.74      .080 No_date    26:50    34.02  n/a
            overflow <= 09:P3-OVF   157.26    11.047 No_date    28:10    34.02  n/a
     {MxStoUsed=.7800E+00, TotOvfVol=.5350E+01, N-Ovf=    2, TotDurOvf=   14.hrs}
 005:0040---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD             01:N_TO   54709.01    70.805 No_date    35:15    18.76  n/a
                      +  02:MS_P3     37.74      .080 No_date    26:50    34.02  n/a
                      +  09:P3-OVF   157.26    11.047 No_date    28:10    34.02  n/a
      [DT= 5.00]  SUM=  10:SN_TO  54904.01    71.226 No_date    35:15    18.82  n/a
 005:0041---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD            10:SN_TO  54904.01    71.226 No_date    35:15    18.82  n/a
      fname :C:\Navin\OCTOBE~1\CONTIN~1\SMR_POST\H-SN_TO.005
      remark:Total Flows at Todd Drain
#
# Hydrograph from Todd Drain routed to Corrigan Drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 2462
#
 005:0042---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 10:SN_TO  54904.01    71.226 No_date    35:15    18.82  n/a
   *  [RDT= 5.00] out<- 01:N_TO   54904.01    71.106 No_date    35:40    18.82  n/a
      [L/S/n=  280./ .033/.045]
      {Vmax=  .721:Dmax= 2.885}
#******************************************************************************
#    Catchment CORRIG
#    - To Corrigan Drain (south of the Jock)
#    - Primarily Developed (medium density)
#******************************************************************************
 005:0043---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CONTINUOUS STANDHYD02:CORRIG   149.00     9.766 No_date    28:05    34.78 .609
      [XIMP=.45:TIMP=.45]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 997.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
#******************************************************************************
#    Corrigan Pond 1
#    - Rating curve obtained from Barrhaven South MSS modeling
#    - Tributary Drainage Area to MSS Pond 1 = 145 ha
#******************************************************************************
 005:0044---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE RESERVOIR -> 02:CORRIG   149.00     9.766 No_date    28:05    34.78  n/a
      [RDT= 5.00] out<- 05:MS_P1     27.65      .060 No_date    26:30    34.78  n/a
            overflow <= 04:P1-OVF   121.35     9.684 No_date    28:05    34.78  n/a
     {MxStoUsed=.5799E+00, TotOvfVol=.4220E+01, N-Ovf=    3, TotDurOvf=   14.hrs}
 005:0045---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD             01:N_TO   54904.01    71.106 No_date    35:40    18.82  n/a
                      +  04:P1-OVF   121.35     9.684 No_date    28:05    34.78  n/a
                      +  05:MS_P1     27.65      .060 No_date    26:30    34.78  n/a
      [DT= 5.00]  SUM=  03:SN_CO  55053.00    71.431 No_date    35:40    18.86  n/a
 005:0046---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD            03:SN_CO  55053.00    71.431 No_date    35:40    18.86  n/a
      fname :C:\Navin\OCTOBE~1\CONTIN~1\SMR_POST\H-SN_CO.005
      remark:Total Flows at Corrigan Drain
#
# Hydrograph from Corrigan Drain routed to Jockvale Road
# Channel X-Section obtained from RVCA Hydraulic Model - Station 2462
#
 005:0047---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 03:SN_CO  55053.00    71.431 No_date    35:40    18.86  n/a
      [RDT= 5.00] out<- 01:N_MI   55053.00    71.427 No_date    35:45    18.86  n/a
      [L/S/n=  580./ .445/.045]
      {Vmax= 1.654:Dmax= 1.485}
#******************************************************************************
#    Catchment MILLS
#    - To SWM Facility north of the Jock
#    - Primarily residental development
#******************************************************************************
 005:0048---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CONTINUOUS STANDHYD02:MILLS    139.00     7.873 No_date    28:05    30.98 .542
      [XIMP=.38:TIMP=.38]
      [LOSS= 2 :CN= 74.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 963.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 36.67: SMAX=244.49: SK= .010]
#******************************************************************************
#    Chapman Mills SWM Pond
#    - Rating curve obtained from CCL hydraulic modeling
#******************************************************************************
 005:0049---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE RESERVOIR -> 02:MILLS    139.00     7.873 No_date    28:05    30.98  n/a
      [RDT= 5.00] out<- 05:MILL_P   139.00     2.516 No_date    28:40    30.98  n/a
            overflow <= 04:MIL-OV      .00      .000 No_date     0:00      .00  n/a
     {MxStoUsed=.1506E+01, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
 005:0050---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD             01:N_MI   55053.00    71.427 No_date    35:45    18.86  n/a
                      +  04:MIL-OV      .00      .000 No_date     0:00      .00  n/a
                      +  05:MILL_P   139.00     2.516 No_date    28:40    30.98  n/a
      [DT= 5.00]  SUM=  03:SN_MI  55192.00    71.786 No_date    35:45    18.89  n/a
 005:0051---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD            03:SN_MI  55192.00    71.786 No_date    35:45    18.89  n/a
      fname :C:\Navin\OCTOBE~1\CONTIN~1\SMR_POST\H-SN_MI.005
      remark:Total Flows at Jockvale Road
#
# Hydrograph from Jockvale Road routed to Heart's Desire
# Channel X-Section obtained from RVCA Hydraulic Model - Station 689
#
 005:0052---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 03:SN_MI  55192.00    71.786 No_date    35:45    18.89  n/a
      [RDT= 5.00] out<- 01:N_DE   55192.00    71.488 No_date    36:20    18.89  n/a
      [L/S/n= 1962./ .223/.045]
      {Vmax=  .940:Dmax=  .073}
#******************************************************************************
#    Catchment DESIRE
#    - To Jock River (north of the Jock)
#    - Rural-estate subdivision (Heart's Desire Community)
#******************************************************************************
 005:0053---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CONTINUOUS STANDHYD02:DESIRE    24.00     1.289 No_date    28:00    27.22 .477
      [XIMP=.25:TIMP=.25]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 400.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
#******************************************************************************
#    Catchment JOCKVA
#    - To Jockvale SWM Facility
#    - Residential development & golf course
#******************************************************************************
 005:0054---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CONTINUOUS STANDHYD03:JOCKVA   252.00    15.852 No_date    28:05    35.73 .626
      [XIMP=.50:TIMP=.50]
      [LOSS= 2 :CN= 74.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI=1296.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 36.67: SMAX=244.49: SK= .010]
#******************************************************************************
#    Jockvale SWM Facility
#    - Rating curve obtained from Jockvale Servicing Study (CCL 1999)
#******************************************************************************
 005:0055---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE RESERVOIR -> 03:JOCKVA   252.00    15.852 No_date    28:05    35.73  n/a
      [RDT= 5.00] out<- 05:JOCK_P   252.00     4.332 No_date    28:50    35.73  n/a
            overflow <= 04:JO-OVF      .00      .000 No_date     0:00      .00  n/a
     {MxStoUsed=.3962E+01, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
 005:0056---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD             01:N_DE   55192.00    71.488 No_date    36:20    18.89  n/a
                      +  02:DESIRE    24.00     1.289 No_date    28:00    27.22  n/a
                      +  04:JO-OVF      .00      .000 No_date     0:00      .00  n/a
                      +  05:JOCK_P   252.00     4.332 No_date    28:50    35.73  n/a
      [DT= 5.00]  SUM=  03:SN_DE  55468.00    72.143 No_date    36:15    18.97  n/a
 005:0057---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD            03:SN_DE  55468.00    72.143 No_date    36:15    18.97  n/a
      fname :C:\Navin\OCTOBE~1\CONTIN~1\SMR_POST\H-SN_DE.005
      remark:Total Flows at Heart's Desire
#
# Hydrograph from Heart's Desire routed to Rideau River
# Channel X-Section obtained from RVCA Hydraulic Model - Station 0
#
 005:0058---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 03:SN_DE  55468.00    72.143 No_date    36:15    18.97  n/a
      [RDT= 5.00] out<- 01:N1     55468.00    72.141 No_date    36:20    18.97  n/a
      [L/S/n=  563./ .967/.045]
      {Vmax= 2.709:Dmax=  .022}
#******************************************************************************
#    Catchment S-2
#    - To Jock River (north and south)
#    - Undeveloped floodplain and river
#******************************************************************************
 005:0059---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CONTINUOUS NASHYD  02:S-2      102.00     2.237 No_date    28:20    18.99 .332
      [CN= 72.0: N= 3.00]
      [Tp=  .40:DT= 5.00]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
 005:0060---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
```

```
     ADD HYD            01:N1     55468.00   72.141 No_date   36:20   18.97  n/a
                      + 02:S-2      102.00    2.237 No_date   28:20   18.99  n/a
      [DT= 5.00]  SUM=  03:SN_N1  55570.00   72.311 No_date   36:20   18.97  n/a
 005:0061---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           03:SN_N1  55570.00   72.311 No_date   36:20   18.97  n/a
      fname :C:\Navin\OCTOBE~1\CONTIN~1\SMR_POST\H-SN_N1.005
      remark:Total Flows at Rideau River
  ** END OF RUN :  24
********************************************************************************
 RUN:COMMAND#
 025:0001-----------------------------------------------------------------------
     START
      [TZERO =    .00 hrs on        0]
      [METOUT=   2    (1=imperial, 2=metric output)]
      [NSTORM=   1 ]
      [NRUN  =  25 ]
#*******************************************************************************
#  Project Name: [Jock River Reach 1 SubWatershed Study]Project #: [160400414]
#  Date        : October 2006
#  Modeller    : [Navin Gautam/ Original by Ana M Paerez]
#  Company     : Stantec.
#  License #   :  3824306
#*******************************************************************************
#-----------------|-------------------------------------------------------------|
 025:0002------------------------------------------------------------------------
     READ STORM
      Filename = storm.001
      Comment  = Pluie SCS de 24 hres 1:25 ans pour Ottawa CDA
      [SDT=10.00:SDUR=  24.00:PTOT=  74.39]
 025:0003------------------------------------------------------------------------
     MODIFY STORM
      [RFACT=  1.00:TSHIFT= 960.00 min]
      [SDT=10.00:SDUR=  40.00:PTOT=  74.39]
 025:0004------------------------------------------------------------------------
     DEFAULT VALUES
      Filename = C:\Navin\OCTOBE~1\CONTIN~1\SMR_POST\MODIFIED.VAL
      ICASEdv  = 1 (read and print data)
      FileTitle= File comment: [2005 City of Ottawa Sewer Design Guideline]
                 PARAMETERS USED IN THE DESIGN STANDHYD COMMAND FOR OTTAWA.
      Horton's infiltration equation parameters:
      [Fo= 76.20 mm/hr] [Fc=13.20 mm/hr] [DCAY= 4.14 /hr] [F=  .00 mm]
      Parameters for PERVIOUS surfaces in STANDHYD:
      [IAper=   4.67 mm] [LGP=40.00 m] [MNP= .250]
      Parameters for IMPERVIOUS surfaces in STANDHYD:
      [IAimp=   1.57 mm] [CLI= 1.50]   [MNI= .013]
      Parameters used in NASHYD:
      [Ia=   2.50 mm] [N= 3.00]
 025:0005------------------------------------------------------------------------
     COMPUTE API
      [APIini= 50.00: APIkdy= .8500: APIkdt= .9989]
      {APImax=106.76: APIavg= 65.09: APImin= 44.87}
#*******************************************************************************
#
#            JOCK RIVER REACH 1 SUBWATERSHED STUDY DISCRETIZED MODEL
#                    PROPOSED CONDITIONS DESIGN STORM MODEL (SUMMER)
#
# Version: Draft Final Report, October 2006
# Revision History
# -Draft Interim Condition Report, Nov. 2005
#*******************************************************************************
# Assumptions
# - All catchments are assumed to be developed except S-1, S-2, and SW-1a
# - SWM facilities are modeled
# - Rating curves were estimated based on existing reports and modeling for the
#   proposed SWM facilities
# - The rating curve for the existing Kennedy Burnett SWM Facility was obtained
#   the Urban Runoff Treatment in the Kennedy Burnett Settling Pond (URTKBP)- R
#   Municipality of Ottawa Carleton, March 1983
# - River routing modeled
# - River cross sections obtained from RVCA's HEC-RAS hydraulic model
#-----------------|-------------------------------------------------------------|
# Parameters
# - Design Storms: 2,5,10,25,50 &1 00yr events: 24hr SCS (DT=10min)-model compa
# - Impervious area weighted based on: rural subdivision @20%, urban @55%
# - NRCS(SCS) CN based on landuse (airphoto) and soil type (base mapping)
# - Time to peak using Uplands Method
#-----------------|-------------------------------------------------------------|
#*******************************************************************************
#Read hydrograph upstream of N2 from RVCA Jock R. floodrisk watershed modeling
#*******************************************************************************
 025:0006---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     READ HYD           01:S_N2   52483.01  104.834 No_date   33:00   28.63  n/a
      Filename = C:\Navin\OCTOBE~1\CONTIN~1\SMR_POST\H-S_N2.025
      Comment  = N2
#
# Hydrograph from Node 2 routed to Node 416
# Channel X-Section obtained from RVCA Hydraulic Model - Station 9025
#
 025:0007---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 01:S_N2   52483.01  104.834 No_date   33:00   28.63  n/a
      [RDT=10.00] out<- 04:N_416  52483.01  102.143 No_date   33:50   28.63  n/a
      [L/S/n= 2327./ .050/.055]
      {Vmax=  .752:Dmax= 3.287}
#*******************************************************************************
#    Catchment SW-1a
#    - Portion of RVCA catchment SW_1 outside of Reach 1 subwatershed
#    - Undeveloped agricultural land
#*******************************************************************************
 025:0008---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CONTINUOUS NASHYD  02:SW_1a    546.00    5.203 No_date   31:15   30.12 .405
      [CN= 72.0: N= 3.00]
      [Tp= 2.79:DT= 5.00]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
 025:0009---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD            04:N_416  52483.01  102.143 No_date   33:50   28.63  n/a
                      + 02:SW_1a    546.00    5.203 No_date   31:15   30.12  n/a
      [DT= 5.00]  SUM=  03:SN_416 53029.01  106.064 No_date   33:40   28.65  n/a
 025:0010---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           03:SN_416 53029.01  106.064 No_date   33:40   28.65  n/a
      fname :C:\Navin\OCTOBE~1\CONTIN~1\SMR_POST\H-SN_416.025
      remark:Total Flows at Highway 416
#
# Hydrograph from Node 416 routed to Node at Okeefe drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 7245
#
 025:0011---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 03:SN_416 53029.01  106.064 No_date   33:40   28.65  n/a
      [RDT= 5.00] out<- 01:N_OK   53029.01  106.047 No_date   33:45   28.65  n/a
      [L/S/n=  497./ .302/.055]
      {Vmax= 1.563:Dmax= 2.795}
#*******************************************************************************
#    Catchment OKEEFE
#    - To O'Keefe drain (north of the Jock)
#    - Developed with assumed 43% imp.
#*******************************************************************************
 025:0012---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CONTINUOUS STANDHYD02:OKEEFE   448.00   29.427 No_date   28:10   48.46 .651
      [XIMP=.43:TIMP=.43]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1728.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
#*******************************************************************************
#    Okeefe Pond
#    - Rating curve obtained assuming 40m3/ha in 24 hours for quality control
#        and a ratio of the catchment area to the West Clarke pond rating curve
#      from the MSS for the next coordinates
#*******************************************************************************
 025:0013---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE RESERVOIR -> 02:OKEEFE   448.00   29.427 No_date   28:10   48.46  n/a
      [RDT= 5.00] out<- 04:P_OKE     63.85     .200 No_date   25:40   48.46  n/a
            overflow <= 09:ok-OVF   384.15   29.155 No_date   28:15   48.46  n/a
     {MxStoUsed=.1719E+01, TotOvfVol=.1862E+02, N-Ovf=    2, TotDurOvf=   15.hrs}
 025:0014---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD            01:N_OK   53029.01  106.047 No_date   33:45   28.65  n/a
                      + 04:P_OKE     63.85     .200 No_date   25:40   48.46  n/a
                      + 09:ok-OVF   384.15   29.155 No_date   28:15   48.46  n/a
      [DT= 5.00]  SUM=  03:SN_OK  53477.01  107.487 No_date   33:45   28.82  n/a
 025:0015---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           03:SN_OK  53477.01  107.487 No_date   33:45   28.82  n/a
      fname :C:\Navin\OCTOBE~1\CONTIN~1\SMR_POST\H-SN_OK.025
      remark:Total Flows at Okeefe Drain
#
# Hydrograph from Node Okeefe routed to Node at Foster Drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 6215
#
 025:0016---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 03:SN_OK  53477.01  107.487 No_date   33:45   28.82  n/a
      [RDT= 5.00] out<- 01:N_FO   53477.01  107.402 No_date   33:50   28.82  n/a
      [L/S/n= 1183./ .076/.035]
      {Vmax= 1.826:Dmax=  .024}
#*******************************************************************************
#    Catchment FOSTER
#    - To Foster ditch (north of the Jock)
#    - Partially developed (medium density); remaining agricultural
#*******************************************************************************
 025:0017---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CONTINUOUS STANDHYD02:FOSTER   373.00   29.559 No_date   28:10   52.35 .704
      [XIMP=.55:TIMP=.55]
      [LOSS= 2 :CN= 74.0]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1577.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 36.67: SMAX=244.49: SK= .010]
#*******************************************************************************
#    Foster Pond
#    - Rating curve obtained assuming 40m3/ha in 24 hours for quality control
#        and a ratio of the catchment area to the West Clarke pond rating curve
#      from the MSS for the next coordinates
#*******************************************************************************
 025:0018---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE RESERVOIR -> 02:FOSTER   373.00   29.559 No_date   28:10   52.35  n/a
      [RDT= 5.00] out<- 04:P_FOS     59.03     .200 No_date   25:25   52.35  n/a
            overflow <= 09:FO-OVF   313.97   28.947 No_date   28:15   52.35  n/a
     {MxStoUsed=.1720E+01, TotOvfVol=.1644E+02, N-Ovf=    2, TotDurOvf=   15.hrs}
 025:0019---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD            01:N_FO   53477.01  107.402 No_date   33:50   28.82  n/a
                      + 04:P_FOS     59.03     .200 No_date   25:25   52.35  n/a
                      + 09:FO-OVF   313.97   28.947 No_date   28:15   52.35  n/a
      [DT= 5.00]  SUM=  03:SN_FO  53850.01  108.602 No_date   33:50   28.98  n/a
 025:0020---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           03:SN_FO  53850.01  108.602 No_date   33:50   28.98  n/a
      fname :C:\Navin\OCTOBE~1\CONTIN~1\SMR_POST\H-SN_FO.025
      remark:Total Flows at Foster Drain
#
# Hydrograph from Node Foster routed to Node at Cedarview Road
# Channel X-Section obtained from RVCA Hydraulic Model - Station 6016
#
 025:0021---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 03:SN_FO  53850.01  108.602 No_date   33:50   28.98  n/a
      [RDT= 5.00] out<- 01:N_CE   53850.01  108.600 No_date   33:50   28.98  n/a
      [L/S/n=  159./ .082/.035]
      {Vmax= 3.197:Dmax=  .004}
#*******************************************************************************
#    Catchment S-1
#    - To Jock River (north and south of Jock)
#    - Primarily agricultural fields; portion of sand quarry
#*******************************************************************************
 025:0022---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CONTINUOUS NASHYD  02:S-1      245.00    5.406 No_date   29:10   34.13 .459
      [CN= 77.0: N= 3.00]
      [Tp= 1.10:DT= 5.00]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
 025:0023---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD            01:N_CE   53850.01  108.600 No_date   33:50   28.98  n/a
                      + 02:S-1      245.00    5.406 No_date   29:10   34.13  n/a
      [DT= 5.00]  SUM=  03:SN_CE  54095.01  109.498 No_date   33:50   29.00  n/a
 025:0024---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           03:SN_CE  54095.01  109.498 No_date   33:50   29.00  n/a
      fname :C:\Navin\OCTOBE~1\CONTIN~1\SMR_POST\H-SN_CE.025
      remark:Total Flows at Cedarview Road
#
# Hydrograph from Node Cedarview Road routed to Node at West Clarke Drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 5002
#
 025:0025---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 03:SN_CE  54095.01  109.498 No_date   33:50   29.00  n/a
      [RDT= 5.00] out<- 01:N_WC   54095.01  109.438 No_date   34:00   29.00  n/a
      [L/S/n=  825./ .010/.035]
      {Vmax= 1.282:Dmax=  .002}
#*******************************************************************************
#    Catchment W_CLAR
#    - To West Clarke Drain (south of the Jock)
#    - Subdivision with 43% imp. as per Barrhaven South MSS
#*******************************************************************************
 025:0026---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CONTINUOUS STANDHYD02:W_CLAR   243.00   19.911 No_date   28:05   47.67 .641
      [XIMP=.43:TIMP=.43]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI=1273.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
#*******************************************************************************
#    West Clarke Pond 2
#    - Rating curve obtained from Barrhaven South MSS modeling
#    - Tributary Drainage Area to MSS Pond 2 = 241 ha
#*******************************************************************************
 025:0027---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE RESERVOIR -> 02:W_CLAR   243.00   19.911 No_date   28:05   47.67  n/a
      [RDT= 5.00] out<- 08:MS_P2     35.65     .110 No_date   25:40   47.67  n/a
            overflow <= 09:P2-OVF   207.35   19.630 No_date   28:10   47.67  n/a
     {MxStoUsed=.9599E+00, TotOvfVol=.9884E+01, N-Ovf=    1, TotDurOvf=   15.hrs}
 025:0028---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD            08:MS_P2     35.65     .110 No_date   25:40   47.67  n/a
                      + 09:P2-OVF   207.35   19.630 No_date   28:10   47.67  n/a
                      + 01:N_WC   54095.01  109.438 No_date   34:00   29.00  n/a
      [DT= 5.00]  SUM=  04:SN_WC  54338.01  110.177 No_date   34:00   29.09  n/a
 025:0029---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           04:SN_WC  54338.01  110.177 No_date   34:00   29.09  n/a
      fname :C:\Navin\OCTOBE~1\CONTIN~1\SMR_POST\H-SN_WC.025
      remark:Total Flows at West Clarke Pond Outlet
# Hydrograph from Node West Clarke routed to Node at Kennedy - Burnett Drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 4534
#
 025:0030---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 04:SN_WC  54338.01  110.177 No_date   34:00   29.09  n/a
      [RDT= 5.00] out<- 01:N_KB   54338.01  109.789 No_date   34:10   29.09  n/a
      [L/S/n= 1020./ .050/.035]
      {Vmax= 1.079:Dmax= 3.520}
#*******************************************************************************
#    Catchment KEN_BU
#    - To Kennedy-Burnett SWM Facility
#    - Outlets to Fraser-Clarke drain (north of the Jock)
#    - Medium density residential subdivision
#*******************************************************************************
 025:0031---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CONTINUOUS STANDHYD02:KEN_BU   281.00   26.648 No_date   28:05   51.46 .692
      [XIMP=.55:TIMP=.55]
      [LOSS= 2 :CN= 71.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI=1369.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 41.38: SMAX=275.84: SK= .010]
#*******************************************************************************
#   Existing Kennedy-Burnett SWM Facility
#    - Rating curve obtained from URTKBP
#    - Tributary Drainage Area to Pond = 160 ha
#*******************************************************************************
 025:0032---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE RESERVOIR -> 02:KEN_BU   281.00   26.648 No_date   28:05   51.46  n/a
      [RDT= 5.00] out<- 05:KEN_P    150.13    1.150 No_date   27:55   51.46  n/a
            overflow <= 06:KEN-OV   130.87   25.019 No_date   28:10   51.46  n/a
     {MxStoUsed=.2329E+01, TotOvfVol=.6735E+01, N-Ovf=    3, TotDurOvf=    4.hrs}
#*******************************************************************************
#    Catchment FRASER
#    - To Fraser-Clarke drain (north of the Jock)
#    - Developed land with assumed 43% imp.
#*******************************************************************************
 025:0033---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CONTINUOUS STANDHYD07:FRASER    90.00    6.649 No_date   28:05   42.95 .577
      [XIMP=.25:TIMP=.25]
      [LOSS= 2 :CN= 80.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 775.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 26.32: SMAX=175.50: SK= .010]
 025:0034---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE RESERVOIR -> 07:FRASER    90.00    6.649 No_date   28:05   42.95  n/a
      [RDT= 5.00] out<- 08:MS_P2     14.10     .040 No_date   27:05   42.95  n/a
            overflow <= 09:P2-OVF    75.90    6.399 No_date   28:05   42.95  n/a
     {MxStoUsed=.3600E+00, TotOvfVol=.3260E+01, N-Ovf=    2, TotDurOvf=   14.hrs}
 025:0035---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD            05:KEN_P    150.13    1.150 No_date   27:55   51.46  n/a
                      + 06:KEN-OV   130.87   25.019 No_date   28:10   51.46  n/a
                      + 08:MS_P2     14.10     .040 No_date   27:05   42.95  n/a
                      + 09:P2-OVF    75.90    6.399 No_date   28:05   42.95  n/a
                      + 01:N_KB   54338.01  109.789 No_date   34:10   29.09  n/a
      [DT= 5.00]  SUM=  04:SN_KB  54709.01  111.172 No_date   34:10   29.22  n/a
 025:0036---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           04:SN_KB  54709.01  111.172 No_date   34:10   29.22  n/a
      fname :C:\Navin\OCTOBE~1\CONTIN~1\SMR_POST\H-SN_KB.025
      remark:Total Flows at Ken-Burnett Outlet
# Hydrograph from Node Kennedy - Burnett Drain to Node Todd Drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 3633
#
 025:0037---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 04:SN_KB  54709.01  111.172 No_date   34:10   29.22  n/a
  *   [RDT= 5.00] out<- 01:N_TO   54709.01  110.460 No_date   35:00   29.22  n/a
      [L/S/n=  650./ .050/.035]
      {Vmax=  .280:Dmax=  .998}
#*******************************************************************************
#    Catchment TODD
#    - To Todd Drain (south of the Jock)
#    - Subdivision with 43% imp. as per Barrhaven South MSS
#*******************************************************************************
 025:0038---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CONTINUOUS STANDHYD03:TODD     195.00   17.774 No_date   28:05   48.46 .651
      [XIMP=.43:TIMP=.43]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI=1140.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
#*******************************************************************************
#    Todd Pond 3
#    - Rating curve obtained from Barrhaven South MSS modeling
#    - Tributary Drainage Area to MSS Pond 3 = 193 ha
#*******************************************************************************
 025:0039---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE RESERVOIR -> 03:TODD     195.00   17.774 No_date   28:05   48.46  n/a
      [RDT= 5.00] out<- 02:MS_P3     27.18     .080 No_date   25:35   48.46  n/a
            overflow <= 09:P3-OVF   167.82   17.455 No_date   28:05   48.46  n/a
     {MxStoUsed=.7799E+00, TotOvfVol=.8133E+01, N-Ovf=    2, TotDurOvf=   15.hrs}
 025:0040---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD            01:N_TO   54709.01  110.460 No_date   35:00   29.22  n/a
                      + 02:MS_P3     27.18     .080 No_date   25:35   48.46  n/a
                      + 09:P3-OVF   167.82   17.455 No_date   28:05   48.46  n/a
      [DT= 5.00]  SUM=  10:SN_TO  54904.01  111.061 No_date   35:00   29.29  n/a
 025:0041---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD           10:SN_TO  54904.01  111.061 No_date   35:00   29.29  n/a
      fname :C:\Navin\OCTOBE~1\CONTIN~1\SMR_POST\H-SN_TO.025
      remark:Total Flows at Todd Drain
#
# Hydrograph from Todd Drain routed to Corrigan Drain
```

```
# Channel X-Section obtained from RVCA Hydraulic Model - Station 2462
#
 025:0042---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 10:SN_TO  54904.01  111.061 No_date   35:00   29.29  n/a
  *   [RDT= 5.00] out<- 01:N_TO   54904.01  110.730 No_date   35:20   29.29  n/a
      [L/S/n=  280./ .033/.045]
      {Vmax=  .717:Dmax= 3.588}
#******************************************************************************
#    Catchment CORRIG
#    - To Corrigan Drain (south of the Jock)
#    - Primarily Developed (medium density)
#******************************************************************************
 025:0043---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CONTINUOUS STANDHYD02:CORRIG   149.00   14.272 No_date   28:05   49.32 .663
      [XIMP=.45:TIMP=.45]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 997.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
#******************************************************************************
#    Corrigan Pond 1
#    - Rating curve obtained from Barrhaven South MSS modeling
#    - Tributary Drainage Area to MSS Pond 1 = 145 ha
#******************************************************************************
 025:0044---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE RESERVOIR -> 02:CORRIG   149.00   14.272 No_date   28:05   49.32  n/a
      [RDT= 5.00] out<- 05:MS_P1     20.01     .060 No_date   25:15   49.32  n/a
            overflow <= 04:P1-OVF   128.99   14.115 No_date   28:05   49.32  n/a
     {MxStoUsed=.5798E+00, TotOvfVol=.6362E+01, N-Ovf=    3, TotDurOvf=   15.hrs}
 025:0045---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD               01:N_TO   54904.01  110.730 No_date   35:20   29.29  n/a
                         + 04:P1-OVF   128.99   14.115 No_date   28:05   49.32  n/a
                         + 05:MS_P1     20.01     .060 No_date   25:15   49.32  n/a
      [DT= 5.00]  SUM=  03:SN_CO  55053.01  111.193 No_date   35:20   29.35  n/a
 025:0046---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD              03:SN_CO  55053.01  111.193 No_date   35:20   29.35  n/a
      fname :C:\Navin\OCTOBE~1\CONTIN~1\SMR_POST\H-SN_CO.025
      remark:Total Flows at Corrigan Drain
#
# Hydrograph from Corrigan Drain routed to Jockvale Road
# Channel X-Section obtained from RVCA Hydraulic Model - Station 2462
#
 025:0047---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 03:SN_CO  55053.01  111.193 No_date   35:20   29.35  n/a
      [RDT= 5.00] out<- 01:N_MI   55053.01  111.200 No_date   35:25   29.35  n/a
      [L/S/n=  580./ .445/.045]
      {Vmax= 1.965:Dmax= 1.852}
#******************************************************************************
#    Catchment MILLS
#    - To SWM Facility north of the Jock
#    - Primarily residental development
#******************************************************************************
 025:0048---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CONTINUOUS STANDHYD02:MILLS    139.00   11.666 No_date   28:05   44.62 .600
      [XIMP=.38:TIMP=.38]
      [LOSS= 2 :CN= 74.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 963.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 36.67: SMAX=244.49: SK= .010]
#******************************************************************************
#    Chapman Mills SWM Pond
#    - Rating curve obtained from CCL hydraulic modeling
#******************************************************************************
 025:0049---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE RESERVOIR -> 02:MILLS    139.00   11.666 No_date   28:05   44.62  n/a
      [RDT= 5.00] out<- 05:MILL_P   139.00    3.765 No_date   28:40   44.62  n/a
            overflow <= 04:MIL-OV      .00     .000 No_date    0:00     .00  n/a
     {MxStoUsed=.2157E+01, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
 025:0050---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD               01:N_MI   55053.01  111.200 No_date   35:25   29.35  n/a
                         + 04:MIL-OV      .00     .000 No_date    0:00     .00  n/a
                         + 05:MILL_P   139.00    3.765 No_date   28:40   44.62  n/a
      [DT= 5.00]  SUM=  03:SN_MI  55192.01  111.709 No_date   35:25   29.38  n/a
 025:0051---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD              03:SN_MI  55192.01  111.709 No_date   35:25   29.38  n/a
      fname :C:\Navin\OCTOBE~1\CONTIN~1\SMR_POST\H-SN_MI.025
      remark:Total Flows at Jockvale Road
#
# Hydrograph from Jockvale Road routed to Heart's Desire
# Channel X-Section obtained from RVCA Hydraulic Model - Station 689
#
 025:0052---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 03:SN_MI  55192.01  111.709 No_date   35:25   29.38  n/a
      [RDT= 5.00] out<- 01:N_DE   55192.01  111.156 No_date   36:05   29.38  n/a
      [L/S/n= 1962./ .223/.045]
      {Vmax=  .940:Dmax=  .113}
#******************************************************************************
#    Catchment DESIRE
#    - To Jock River (north of the Jock)
#    - Rural-estate subdivision (Heart's Desire Community)
#******************************************************************************
 025:0053---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CONTINUOUS STANDHYD02:DESIRE    24.00    2.012 No_date   28:00   40.77 .548
      [XIMP=.25:TIMP=.25]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 400.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
#******************************************************************************
#    Catchment JOCKVA
#    - To Jockvale SWM Facility
#    - Residential development & golf course
#******************************************************************************
 025:0054---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CONTINUOUS STANDHYD03:JOCKVA   252.00   22.732 No_date   28:05   50.08 .673
      [XIMP=.50:TIMP=.50]
      [LOSS= 2 :CN= 74.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI=1296.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 36.67: SMAX=244.49: SK= .010]
#******************************************************************************
#    Jockvale SWM Facility
#    - Rating curve obtained from Jockvale Servicing Study (CCL 1999)
#******************************************************************************
 025:0055---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE RESERVOIR -> 03:JOCKVA   252.00   22.732 No_date   28:05   50.08  n/a
      [RDT= 5.00] out<- 05:JOCK_P   252.00    8.221 No_date   28:40   50.08  n/a
            overflow <= 04:JO-OVF      .00     .000 No_date    0:00     .00  n/a
     {MxStoUsed=.5163E+01, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
 025:0056---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD               01:N_DE   55192.01  111.156 No_date   36:05   29.38  n/a
                         + 02:DESIRE    24.00    2.012 No_date   28:00   40.77  n/a
                         + 04:JO-OVF      .00     .000 No_date    0:00     .00  n/a
                         + 05:JOCK_P   252.00    8.221 No_date   28:40   50.08  n/a
      [DT= 5.00]  SUM=  03:SN_DE  55468.00  112.074 No_date   36:00   29.48  n/a
 025:0057---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD              03:SN_DE  55468.00  112.074 No_date   36:00   29.48  n/a
      fname :C:\Navin\OCTOBE~1\CONTIN~1\SMR_POST\H-SN_DE.025
      remark:Total Flows at Heart's Desire
#
# Hydrograph from Heart's Desire routed to Rideau River
# Channel X-Section obtained from RVCA Hydraulic Model - Station 0
#
 025:0058---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 03:SN_DE  55468.00  112.074 No_date   36:00   29.48  n/a
      [RDT= 5.00] out<- 01:N1     55468.00  112.070 No_date   36:05   29.48  n/a
      [L/S/n=  563./ .967/.045]
      {Vmax= 2.709:Dmax=  .034}
#******************************************************************************
#    Catchment S-2
#    - To Jock River (north and south)
#    - Undeveloped floodplain and river
#******************************************************************************
 025:0059---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CONTINUOUS NASHYD  02:S-2      102.00    3.924 No_date   28:20   30.12 .405
      [CN= 72.0: N= 3.00]
      [Tp=  .40:DT= 5.00]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
 025:0060---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD               01:N1     55468.00  112.070 No_date   36:05   29.48  n/a
                         + 02:S-2      102.00    3.924 No_date   28:20   30.12  n/a
      [DT= 5.00]  SUM=  03:SN_N1  55570.01  112.351 No_date   36:05   29.48  n/a
 025:0061---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD              03:SN_N1  55570.01  112.351 No_date   36:05   29.48  n/a
      fname :C:\Navin\OCTOBE~1\CONTIN~1\SMR_POST\H-SN_N1.025
      remark:Total Flows at Rideau River
  ** END OF RUN :  99
 ******************************************************************************
 RUN:COMMAND#
 100:0001----------------------------------------------------------------------
     START
      [TZERO =    .00 hrs on       0]
      [METOUT=   2    (1=imperial, 2=metric output)]
      [NSTORM=   1 ]
      [NRUN  = 100 ]
#******************************************************************************
#  Project Name: [Jock River Reach 1 SubWatershed Study]Project #: [160400414]
#  Date        : October 2006
#  Modeller    : [Navin Gautam/ Original by Ana M Paerez]
#  Company     : Stantec.
#  License #   :  3824306
#******************************************************************************
#-----------------|------------------------------------------------------------|
 100:0002-----------------------------------------------------------------------
     READ STORM
      Filename = storm.001
      Comment  = Pluie SCS de 24 hres 1:100 ans pour Ottawa CDA
      [SDT=10.00:SDUR=  24.00:PTOT=  88.57]
 100:0003----------------------------------------------------------------------
     MODIFY STORM
      [RFACT=  1.00:TSHIFT= 960.00 min]
      [SDT=10.00:SDUR=  40.00:PTOT=  88.57]
 100:0004----------------------------------------------------------------------
     DEFAULT VALUES
      Filename = C:\Navin\OCTOBE~1\CONTIN~1\SMR_POST\MODIFIED.VAL
      ICASEdv  = 1 (read and print data)
      FileTitle= File comment: [2005 City of Ottawa Sewer Design Guideline]
                 PARAMETERS USED IN THE DESIGN STANDHYD COMMAND FOR OTTAWA.
      Horton's infiltration equation parameters:
      [Fo= 76.20 mm/hr] [Fc=13.20 mm/hr] [DCAY= 4.14 /hr] [F=  .00 mm]
      Parameters for PERVIOUS surfaces in STANDHYD:
      [IAper=   4.67 mm] [LGP=40.00 m] [MNP= .250]
      Parameters for IMPERVIOUS surfaces in STANDHYD:
      [IAimp=   1.57 mm] [CLI= 1.50]   [MNI= .013]
      Parameters used in NASHYD:
      [Ia=   2.50 mm] [N= 3.00]
 100:0005----------------------------------------------------------------------
     COMPUTE API
      [APIini= 50.00: APIkdy= .8500: APIkdt= .9989]
      {APImax=119.84: APIavg= 69.19: APImin= 44.87}
#******************************************************************************
#
#            JOCK RIVER REACH 1 SUBWATERSHED STUDY DISCRETIZED MODEL
#                    PROPOSED CONDITIONS DESIGN STORM MODEL (SUMMER)
#
# Version: Draft Final Report, October 2006
# Revision History
# -Draft Interim Condition Report, Nov. 2005
#******************************************************************************
# Assumptions
# - All catchments are assumed to be developed except S-1, S-2, and SW-1a
# - SWM facilities are modeled
# - Rating curves were estimated based on existing reports and modeling for the
#   proposed SWM facilities
# - The rating curve for the existing Kennedy Burnett SWM Facility was obtained
#   the Urban Runoff Treatment in the Kennedy Burnett Settling Pond (URTKBP)- R
#   Municipality of Ottawa Carleton, March 1983
# - River routing modeled
# - River cross sections obtained from RVCA's HEC-RAS hydraulic model
#-----------------|------------------------------------------------------------|
# Parameters
# - Design Storms: 2,5,10,25,50 &1 00yr events: 24hr SCS (DT=10min)-model compa
# - Impervious area weighted based on: rural subdivision @20%, urban @55%
# - NRCS(SCS) CN based on landuse (airphoto) and soil type (base mapping)
# - Time to peak using Uplands Method
#-----------------|------------------------------------------------------------|
#******************************************************************************
#Read hydrograph upstream of N2 from RVCA Jock R. floodrisk watershed modeling
#******************************************************************************
 100:0006---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     READ HYD              01:S_N2   52483.01  141.853 No_date   32:50   38.75  n/a
      Filename = C:\Navin\OCTOBE~1\CONTIN~1\SMR_POST\H-S_N2.100
      Comment  = N2
#
# Hydrograph from Node 2 routed to Node 416
# Channel X-Section obtained from RVCA Hydraulic Model - Station 9025
#
 100:0007---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 01:S_N2   52483.01  141.853 No_date   32:50   38.75  n/a
      [RDT=10.00] out<- 04:N_416  52483.01  137.555 No_date   33:30   38.75  n/a
      [L/S/n= 2327./ .050/.055]
      {Vmax=  .799:Dmax= 3.792}
#******************************************************************************
#    Catchment SW-1a
#    - Portion of RVCA catchment SW_1 outside of Reach 1 subwatershed
#    - Undeveloped agricultural land
#******************************************************************************
 100:0008---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CONTINUOUS NASHYD  02:SW_1a    546.00    7.343 No_date   31:10   40.95 .462
      [CN= 72.0: N= 3.00]
      [Tp= 2.79:DT= 5.00]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
 100:0009---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD               04:N_416  52483.01  137.555 No_date   33:30   38.75  n/a
                         + 02:SW_1a    546.00    7.343 No_date   31:10   40.95  n/a
      [DT= 5.00]  SUM=  03:SN_416 53029.01  143.235 No_date   33:30   38.77  n/a
 100:0010---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD              03:SN_416 53029.01  143.235 No_date   33:30   38.77  n/a
      fname :C:\Navin\OCTOBE~1\CONTIN~1\SMR_POST\H-SN_416.100
      remark:Total Flows at Highway 416
#
# Hydrograph from Node 416 routed to Node at Okeefe drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 7245
#
 100:0011---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 03:SN_416 53029.01  143.235 No_date   33:30   38.77  n/a
      [RDT= 5.00] out<- 01:N_OK   53029.01  143.199 No_date   33:35   38.77  n/a
      [L/S/n=  497./ .302/.055]
      {Vmax= 1.722:Dmax= 3.248}
#******************************************************************************
#    Catchment OKEEFE
#    - To O'Keefe drain (north of the Jock)
#    - Developed with assumed 43% imp.
#******************************************************************************
 100:0012---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CONTINUOUS STANDHYD02:OKEEFE   448.00   38.901 No_date   28:15   61.25 .692
      [XIMP=.43:TIMP=.43]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1728.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
#******************************************************************************
#    Okeefe Pond
#    - Rating curve obtained assuming 40m3/ha in 24 hours for quality control
#   and a ratio of the catchment area to the West Clarke pond rating curve
#      from the MSS for the next coordinates
#******************************************************************************
 100:0013---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE RESERVOIR -> 02:OKEEFE   448.00   38.901 No_date   28:15   61.25  n/a
      [RDT= 5.00] out<- 04:P_OKE     51.38     .200 No_date   24:45   61.25  n/a
            overflow <= 09:ok-OVF   396.62   38.659 No_date   28:15   61.25  n/a
     {MxStoUsed=.1720E+01, TotOvfVol=.2429E+02, N-Ovf=    2, TotDurOvf=   16.hrs}
 100:0014---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD               01:N_OK   53029.01  143.199 No_date   33:35   38.77  n/a
                         + 04:P_OKE     51.38     .200 No_date   24:45   61.25  n/a
                         + 09:ok-OVF   396.62   38.659 No_date   28:15   61.25  n/a
      [DT= 5.00]  SUM=  03:SN_OK  53477.02  145.022 No_date   33:30   38.96  n/a
 100:0015---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD              03:SN_OK  53477.02  145.022 No_date   33:30   38.96  n/a
      fname :C:\Navin\OCTOBE~1\CONTIN~1\SMR_POST\H-SN_OK.100
      remark:Total Flows at Okeefe Drain
#
# Hydrograph from Node Okeefe routed to Node at Foster Drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 6215
#
 100:0016---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 03:SN_OK  53477.02  145.022 No_date   33:30   38.96  n/a
      [RDT= 5.00] out<- 01:N_FO   53477.02  144.892 No_date   33:40   38.96  n/a
      [L/S/n= 1183./ .076/.035]
      {Vmax= 1.826:Dmax=  .032}
#******************************************************************************
#    Catchment FOSTER
#    - To Foster ditch (north of the Jock)
#    - Partially developed (medium density); remaining agricultural
#******************************************************************************
 100:0017---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CONTINUOUS STANDHYD02:FOSTER   373.00   38.921 No_date   28:05   65.13 .735
      [XIMP=.55:TIMP=.55]
      [LOSS= 2 :CN= 74.0]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1577.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 36.67: SMAX=244.49: SK= .010]
#******************************************************************************
#    Foster Pond
#    - Rating curve obtained assuming 40m3/ha in 24 hours for quality control
#   and a ratio of the catchment area to the West Clarke pond rating curve
#      from the MSS for the next coordinates
#******************************************************************************
 100:0018---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE RESERVOIR -> 02:FOSTER   373.00   38.921 No_date   28:05   65.13  n/a
      [RDT= 5.00] out<- 04:P_FOS     48.28     .200 No_date   24:30   65.13  n/a
            overflow <= 09:FO-OVF   324.72   38.557 No_date   28:10   65.13  n/a
     {MxStoUsed=.1720E+01, TotOvfVol=.2115E+02, N-Ovf=    2, TotDurOvf=   16.hrs}
 100:0019---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD               01:N_FO   53477.02  144.892 No_date   33:40   38.96  n/a
                         + 04:P_FOS     48.28     .200 No_date   24:30   65.13  n/a
                         + 09:FO-OVF   324.72   38.557 No_date   28:10   65.13  n/a
      [DT= 5.00]  SUM=  03:SN_FO  53850.02  146.381 No_date   33:40   39.14  n/a
 100:0020---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD              03:SN_FO  53850.02  146.381 No_date   33:40   39.14  n/a
      fname :C:\Navin\OCTOBE~1\CONTIN~1\SMR_POST\H-SN_FO.100
      remark:Total Flows at Foster Drain
#
# Hydrograph from Node Foster routed to Node at Cedarview Road
# Channel X-Section obtained from RVCA Hydraulic Model - Station 6016
#
 100:0021---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 03:SN_FO  53850.02  146.381 No_date   33:40   39.14  n/a
      [RDT= 5.00] out<- 01:N_CE   53850.02  146.383 No_date   33:40   39.14  n/a
      [L/S/n=  159./ .082/.035]
      {Vmax= 3.197:Dmax=  .006}
#******************************************************************************
#    Catchment S-1
#    - To Jock River (north and south of Jock)
#    - Primarily agricultural fields; portion of sand quarry
#******************************************************************************
 100:0022---------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CONTINUOUS NASHYD  02:S-1      245.00    7.588 No_date   29:10   45.94 .519
      [CN= 77.0: N= 3.00]
      [Tp= 1.10:DT= 5.00]
```

```
       [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
       [InterEventTime=  12.00]
 100:0023--------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD             01:N_CE   53850.02  146.383 No_date   33:40   39.14  n/a
                       + 02:S-1      245.00    7.588 No_date   29:10   45.94  n/a
      [DT= 5.00]  SUM=  03:SN_CE  54095.02  147.622 No_date   33:35   39.17  n/a
 100:0024--------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD            03:SN_CE  54095.02  147.622 No_date   33:35   39.17  n/a
      fname :C:\Navin\OCTOBE~1\CONTIN~1\SMR_POST\H-SN_CE.100
      remark:Total Flows at Cedarview Road
#
# Hydrograph from Node Cedarview Road routed to Node at West Clarke Drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 5002
#
 100:0025--------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 03:SN_CE  54095.02  147.622 No_date   33:35   39.17  n/a
      [RDT= 5.00] out<- 01:N_WC   54095.02  147.547 No_date   33:45   39.17  n/a
      [L/S/n=  825./ .010/.035]
      {Vmax= 1.282:Dmax=  .003}
#*******************************************************************************
#    Catchment W_CLAR
#    - To West Clarke Drain (south of the Jock)
#    - Subdivision with 43% imp. as per Barrhaven South MSS
#*******************************************************************************
 100:0026--------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CONTINUOUS STANDHYD02:W_CLAR   243.00   27.368 No_date   28:05   60.27 .680
      [XIMP=.43:TIMP=.43]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI=1273.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
#*******************************************************************************
#    West Clarke Pond 2
#    - Rating curve obtained from Barrhaven South MSS modeling
#    - Tributary Drainage Area to MSS Pond 2 = 241 ha
#*******************************************************************************
 100:0027--------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE RESERVOIR -> 02:W_CLAR   243.00   27.368 No_date   28:05   60.27  n/a
      [RDT= 5.00] out<- 08:MS_P2     28.68     .110 No_date   24:40   60.26  n/a
            overflow <= 09:P2-OVF   214.32   26.785 No_date   28:05   60.27  n/a
     {MxStoUsed=.9600E+00, TotOvfVol=.1292E+02, N-Ovf=    2, TotDurOvf=   16.hrs}
 100:0028--------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD             08:MS_P2     28.68     .110 No_date   24:40   60.26  n/a
                       + 09:P2-OVF   214.32   26.785 No_date   28:05   60.27  n/a
                       + 01:N_WC   54095.02  147.547 No_date   33:45   39.17  n/a
      [DT= 5.00]  SUM=  04:SN_WC  54338.02  148.477 No_date   33:45   39.27  n/a
 100:0029--------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD            04:SN_WC  54338.02  148.477 No_date   33:45   39.27  n/a
      fname :C:\Navin\OCTOBE~1\CONTIN~1\SMR_POST\H-SN_WC.100
      remark:Total Flows at West Clarke Pond Outlet
# Hydrograph from Node West Clarke routed to Node at Kennedy - Burnett Drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 4534
#
 100:0030--------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 04:SN_WC  54338.02  148.477 No_date   33:45   39.27  n/a
      [RDT= 5.00] out<- 01:N_KB   54338.02  147.747 No_date   33:55   39.27  n/a
      [L/S/n= 1020./ .050/.035]
      {Vmax=  .980:Dmax= 3.891}
#*******************************************************************************
#    Catchment KEN_BU
#    - To Kennedy-Burnett SWM Facility
#    - Outlets to Fraser-Clarke drain (north of the Jock)
#    - Medium density residential subdivision
#*******************************************************************************
 100:0031--------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CONTINUOUS STANDHYD02:KEN_BU   281.00   35.633 No_date   28:05   64.01 .723
      [XIMP=.55:TIMP=.55]
      [LOSS= 2 :CN= 71.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI=1369.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 41.38: SMAX=275.84: SK= .010]
#*******************************************************************************
#   Existing Kennedy-Burnett SWM Facility
#    - Rating curve obtained from URTKBP
#    - Tributary Drainage Area to Pond = 160 ha
#*******************************************************************************
 100:0032--------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE RESERVOIR -> 02:KEN_BU   281.00   35.633 No_date   28:05   64.01  n/a
      [RDT= 5.00] out<- 05:KEN_P    132.84    1.150 No_date   27:45   64.01  n/a
            overflow <= 06:KEN-OV   148.16   34.267 No_date   28:05   64.01  n/a
     {MxStoUsed=.2330E+01, TotOvfVol=.9483E+01, N-Ovf=    3, TotDurOvf=    5.hrs}
#*******************************************************************************
#    Catchment FRASER
#    - To Fraser-Clarke drain (north of the Jock)
#    - Developed land with assumed 43% imp.
#*******************************************************************************
 100:0033--------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CONTINUOUS STANDHYD07:FRASER    90.00    9.664 No_date   28:05   55.76 .630
      [XIMP=.25:TIMP=.25]
      [LOSS= 2 :CN= 80.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 775.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 26.32: SMAX=175.50: SK= .010]
 100:0034--------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE RESERVOIR -> 07:FRASER    90.00    9.664 No_date   28:05   55.76  n/a
      [RDT= 5.00] out<- 08:MS_P2     11.04     .040 No_date   26:20   55.76  n/a
            overflow <= 09:P2-OVF    78.96    9.261 No_date   28:05   55.76  n/a
     {MxStoUsed=.3599E+00, TotOvfVol=.4402E+01, N-Ovf=    2, TotDurOvf=   14.hrs}
 100:0035--------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD             05:KEN_P    132.84    1.150 No_date   27:45   64.01  n/a
                       + 06:KEN-OV   148.16   34.267 No_date   28:05   64.01  n/a
                       + 08:MS_P2     11.04     .040 No_date   26:20   55.76  n/a
                       + 09:P2-OVF    78.96    9.261 No_date   28:05   55.76  n/a
                       + 01:N_KB   54338.02  147.747 No_date   33:55   39.27  n/a
      [DT= 5.00]  SUM=  04:SN_KB  54709.01  149.236 No_date   33:55   39.42  n/a
 100:0036--------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD            04:SN_KB  54709.01  149.236 No_date   33:55   39.42  n/a
      fname :C:\Navin\OCTOBE~1\CONTIN~1\SMR_POST\H-SN_KB.100
      remark:Total Flows at Ken-Burnett Outlet
# Hydrograph from Node Kennedy - Burnett Drain to Node Todd Drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 3633
#
 100:0037--------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 04:SN_KB  54709.01  149.236 No_date   33:55   39.42  n/a
   *  [RDT= 5.00] out<- 01:N_TO   54709.01  148.001 No_date   35:05   39.42  n/a
      [L/S/n=  650./ .050/.035]
      {Vmax=  .281:Dmax=  .999}
#*******************************************************************************
#    Catchment TODD
#    - To Todd Drain (south of the Jock)
#    - Subdivision with 43% imp. as per Barrhaven South MSS
#*******************************************************************************
 100:0038--------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CONTINUOUS STANDHYD03:TODD     195.00   22.652 No_date   28:05   61.25 .692
      [XIMP=.43:TIMP=.43]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI=1140.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
#*******************************************************************************
#    Todd Pond 3
#    - Rating curve obtained from Barrhaven South MSS modeling
#    - Tributary Drainage Area to MSS Pond 3 = 193 ha
#*******************************************************************************
 100:0039--------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE RESERVOIR -> 03:TODD     195.00   22.652 No_date   28:05   61.25  n/a
      [RDT= 5.00] out<- 02:MS_P3     21.86     .080 No_date   24:40   61.25  n/a
            overflow <= 09:P3-OVF   173.14   22.231 No_date   28:05   61.25  n/a
     {MxStoUsed=.7796E+00, TotOvfVol=.1060E+02, N-Ovf=    2, TotDurOvf=   16.hrs}
 100:0040--------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD             01:N_TO   54709.01  148.001 No_date   35:05   39.42  n/a
                       + 02:MS_P3     21.86     .080 No_date   24:40   61.25  n/a
                       + 09:P3-OVF   173.14   22.231 No_date   28:05   61.25  n/a
      [DT= 5.00]  SUM=  10:SN_TO  54904.01  148.757 No_date   35:05   39.50  n/a
 100:0041--------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD            10:SN_TO  54904.01  148.757 No_date   35:05   39.50  n/a
      fname :C:\Navin\OCTOBE~1\CONTIN~1\SMR_POST\H-SN_TO.100
      remark:Total Flows at Todd Drain
#
# Hydrograph from Todd Drain routed to Corrigan Drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 2462
#
 100:0042--------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 10:SN_TO  54904.01  148.757 No_date   35:05   39.50  n/a
   *  [RDT= 5.00] out<- 01:N_TO   54904.01  148.481 No_date   35:20   39.50  n/a
      [L/S/n=  280./ .033/.045]
      {Vmax=  .714:Dmax= 4.087}
#*******************************************************************************
#    Catchment CORRIG
#    - To Corrigan Drain (south of the Jock)
#    - Primarily Developed (medium density)
#*******************************************************************************
 100:0043--------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CONTINUOUS STANDHYD02:CORRIG   149.00   19.025 No_date   28:05   62.15 .702
      [XIMP=.45:TIMP=.45]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 997.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
#*******************************************************************************
#    Corrigan Pond 1
#    - Rating curve obtained from Barrhaven South MSS modeling
#    - Tributary Drainage Area to MSS Pond 1 = 145 ha
#*******************************************************************************
 100:0044--------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE RESERVOIR -> 02:CORRIG   149.00   19.025 No_date   28:05   62.15  n/a
      [RDT= 5.00] out<- 05:MS_P1     16.12     .060 No_date   24:20   62.15  n/a
            overflow <= 04:P1-OVF   132.88   18.764 No_date   28:05   62.15  n/a
     {MxStoUsed=.5800E+00, TotOvfVol=.8259E+01, N-Ovf=    2, TotDurOvf=   16.hrs}
 100:0045--------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD             01:N_TO   54904.01  148.481 No_date   35:20   39.50  n/a
                       + 04:P1-OVF   132.88   18.764 No_date   28:05   62.15  n/a
                       + 05:MS_P1     16.12     .060 No_date   24:20   62.15  n/a
      [DT= 5.00]  SUM=  03:SN_CO  55053.02  149.062 No_date   35:20   39.56  n/a
 100:0046--------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD            03:SN_CO  55053.02  149.062 No_date   35:20   39.56  n/a
      fname :C:\Navin\OCTOBE~1\CONTIN~1\SMR_POST\H-SN_CO.100
      remark:Total Flows at Corrigan Drain
#
# Hydrograph from Corrigan Drain routed to Jockvale Road
# Channel X-Section obtained from RVCA Hydraulic Model - Station 2462
#
 100:0047--------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 03:SN_CO  55053.02  149.062 No_date   35:20   39.56  n/a
      [RDT= 5.00] out<- 01:N_MI   55053.02  149.053 No_date   35:25   39.56  n/a
      [L/S/n=  580./ .445/.045]
      {Vmax= 2.191:Dmax= 2.152}
#*******************************************************************************
#    Catchment MILLS
#    - To SWM Facility north of the Jock
#    - Primarily residental development
#*******************************************************************************
 100:0048--------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CONTINUOUS STANDHYD02:MILLS    139.00   15.807 No_date   28:05   56.87 .642
      [XIMP=.38:TIMP=.38]
      [LOSS= 2 :CN= 74.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 963.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 36.67: SMAX=244.49: SK= .010]
#*******************************************************************************
#    Chapman Mills SWM Pond
#    - Rating curve obtained from CCL hydraulic modeling
#*******************************************************************************
 100:0049--------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE RESERVOIR -> 02:MILLS    139.00   15.807 No_date   28:05   56.87  n/a
      [RDT= 5.00] out<- 05:MILL_P   128.54    4.050 No_date   28:15   56.87  n/a
            overflow <= 04:MIL-OV    10.46    7.805 No_date   28:15   56.87  n/a
     {MxStoUsed=.2310E+01, TotOvfVol=.5946E+00, N-Ovf=    2, TotDurOvf=    1.hrs}
 100:0050--------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD             01:N_MI   55053.02  149.053 No_date   35:25   39.56  n/a
                       + 04:MIL-OV    10.46    7.805 No_date   28:15   56.87  n/a
                       + 05:MILL_P   128.54    4.050 No_date   28:15   56.87  n/a
      [DT= 5.00]  SUM=  03:SN_MI  55192.02  149.684 No_date   35:20   39.61  n/a
 100:0051--------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD            03:SN_MI  55192.02  149.684 No_date   35:20   39.61  n/a
      fname :C:\Navin\OCTOBE~1\CONTIN~1\SMR_POST\H-SN_MI.100
      remark:Total Flows at Jockvale Road
#
# Hydrograph from Jockvale Road routed to Heart's Desire
# Channel X-Section obtained from RVCA Hydraulic Model - Station 689
#
 100:0052--------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 03:SN_MI  55192.02  149.684 No_date   35:20   39.61  n/a
      [RDT= 5.00] out<- 01:N_DE   55192.02  148.919 No_date   36:00   39.61  n/a
      [L/S/n= 1962./ .223/.045]
      {Vmax=  .940:Dmax=  .152}
#*******************************************************************************
#    Catchment DESIRE
#    - To Jock River (north of the Jock)
#    - Rural-estate subdivision (Heart's Desire Community)
#*******************************************************************************
 100:0053--------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CONTINUOUS STANDHYD02:DESIRE    24.00    2.882 No_date   28:00   53.12 .600
      [XIMP=.25:TIMP=.25]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 400.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
#*******************************************************************************
#    Catchment JOCKVA
#    - To Jockvale SWM Facility
#    - Residential development & golf course
#*******************************************************************************
 100:0054--------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CONTINUOUS STANDHYD03:JOCKVA   252.00   30.693 No_date   28:05   62.70 .708
      [XIMP=.50:TIMP=.50]
      [LOSS= 2 :CN= 74.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI=1296.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 36.67: SMAX=244.49: SK= .010]
#*******************************************************************************
#    Jockvale SWM Facility
#    - Rating curve obtained from Jockvale Servicing Study (CCL 1999)
#*******************************************************************************
 100:0055--------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE RESERVOIR -> 03:JOCKVA   252.00   30.693 No_date   28:05   62.70  n/a
      [RDT= 5.00] out<- 05:JOCK_P   252.00   11.951 No_date   28:35   62.70  n/a
            overflow <= 04:JO-OVF      .00     .000 No_date    0:00     .00  n/a
     {MxStoUsed=.6202E+01, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
 100:0056--------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD             01:N_DE   55192.02  148.919 No_date   36:00   39.61  n/a
                       + 02:DESIRE    24.00    2.882 No_date   28:00   53.12  n/a
                       + 04:JO-OVF      .00     .000 No_date    0:00     .00  n/a
                       + 05:JOCK_P   252.00   11.951 No_date   28:35   62.70  n/a
      [DT= 5.00]  SUM=  03:SN_DE  55468.01  150.033 No_date   36:00   39.72  n/a
 100:0057--------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD            03:SN_DE  55468.01  150.033 No_date   36:00   39.72  n/a
      fname :C:\Navin\OCTOBE~1\CONTIN~1\SMR_POST\H-SN_DE.100
      remark:Total Flows at Heart's Desire
#
# Hydrograph from Heart's Desire routed to Rideau River
# Channel X-Section obtained from RVCA Hydraulic Model - Station 0
#
 100:0058--------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ROUTE CHANNEL   -> 03:SN_DE  55468.01  150.033 No_date   36:00   39.72  n/a
      [RDT= 5.00] out<- 01:N1     55468.01  150.023 No_date   36:05   39.72  n/a
      [L/S/n=  563./ .967/.045]
      {Vmax= 2.709:Dmax=  .046}
#*******************************************************************************
#    Catchment S-2
#    - To Jock River (north and south)
#    - Undeveloped floodplain and river
#*******************************************************************************
 100:0059--------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     CONTINUOUS NASHYD  02:S-2      102.00    5.616 No_date   28:15   40.95 .462
      [CN= 72.0: N= 3.00]
      [Tp=  .40:DT= 5.00]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
 100:0060--------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     ADD HYD             01:N1     55468.01  150.023 No_date   36:05   39.72  n/a
                       + 02:S-2      102.00    5.616 No_date   28:15   40.95  n/a
      [DT= 5.00]  SUM=  03:SN_N1  55570.01  150.390 No_date   36:05   39.72  n/a
 100:0061--------------ID:NHYD-------AREA----QPEAK-TpeakDate_hh:mm----R.V.-R.C.-
     SAVE HYD            03:SN_N1  55570.01  150.390 No_date   36:05   39.72  n/a
      fname :C:\Navin\OCTOBE~1\CONTIN~1\SMR_POST\H-SN_N1.100
      remark:Total Flows at Rideau River
################################################################################
 100:0002-----------------------------------------------------------------------
      FINISH
-------------------------------------------------------------------------------
*******************************************************************************
     WARNINGS / ERRORS / NOTES
     -------------------------
 002:0037 ROUTE CHANNEL   ->
      *** WARNING: TRAVEL TIME TABLE was exceeded
      *** WARNING: TRAVEL TIME TABLE was exceeded
      *** WARNING: TRAVEL TIME TABLE was exceeded
      *** WARNING: TRAVEL TIME TABLE was exceeded
   Simulation ended on 2006-11-15     at 14:33:35
===============================================================================
```

Ottawa. ON
Paris. ON
Gatineau. QC
Montréal. QC
Québec. QC

Attachment C

Model 3 – Jock River Reach One Update

JFSA, 2021

SWMHYMO Input & Summary files

```
20    Metric units / ID numbers OFF
*#*******************************************************************************
*#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
*#*******************************************************************************
*#  Project Name: [Jock River]    Project Number: [1474-16]
*#  Date         : 04-03-2021
*#  Modeller     : [M.M.]
*#  Company      : JFSAinc.
*#  License #    :  2549237
*#*******************************************************************************
*# CALIBRATION OF SUMMER MODEL PARAMETERS
*# USING CONTINUOUS SIMULATIONS
*# Rainfall data from JFSA raingauge installed at site + other gauges by the City
*# Use data collected from May 1st to July 14, 2003
*# 2020-11-30 change TMJSTO in COMPUTE DUALHYD (TMJSTO = 0.1 instead of 0.0001)
*# 2020-12-01 correct pond curve values
*# 2020-12-01 change W_CLAR_BRAZ XIMP to 0.55, SLPI=[0.5](%) (impervious slope), and
LGI up to 700m
*# 2021-02-19 Change the slope for ROUTE CHANNEL Station 2462 (NHYDout=["N_TO"]
,NHYDin=["SN_TO"]) from 0.033 % (as per Stantec Report 2007) to 0.05 % so the model
will be more stable and give reasonable results. It is justifiable as ROUTE CHANNELs
aren't well suited to really flat slopes.
*# 2021-02-19 Change the slope for ROUTE CHANNEL Station 5002 (NHYDout=["N_WC"]
,NHYDin=["SN_CE"]) from 0.01 % (as per Stantec Report 2007) to 0.0255 % so the model
will be more stable and give reasonable results. It is justifiable as ROUTE CHANNELs
aren't well suited to really flat slopes.
*
* Calibrated parameters for Summer 2003 data:  APII=50, APIK=0.85, CN=varies,
*                                              SK=0.01, InterEventTime=12,
*                                              GWResk=0.96, VHydCond=0.055
*
*# -----------------------------------------------------------------------------
*
*START                TZERO=[2003.0501],  METOUT=[2],  NSTORM=[1],  NRUN=[001]
*                     ["XAVG0315.STM"] average storm data a 15 minute time step
*                     The above rainf file is an average of the JFSA gauge data
*                     with the City of Ottawa rainfall data collected during
*                     the same period.
*%  2 yr, 24 hr SCS storm based on OTTAWA CDA IDF Curves
START                TZERO=[0.0],  METOUT=[2],  NSTORM=[1],  NRUN=[2]
                     ["C24SC002.stm"] <--storm filename, one per line for NSTORM time
*%-----------------|------------------------------------------------------------|
*%-----------------|------------------------------------------------------------|
READ STORM           STORM_FILENAME=["storm.001"]
*%-----------------|------------------------------------------------------------|
MODIFY STORM         ICASEms=[1],  NSHIFT=[96],
                     RedFACT=[1],
*%-----------------|------------------------------------------------------------|
DEFAULT VALUES       ICASEdef=[1],  read and print values
                     DEFVAL_FILENAME=["CitiGate.DEF"]
*%-----------------|------------------------------------------------------------|
COMPUTE API          APII=[50], APIK=[.85]/day
*%-----------------|------------------------------------------------------------|
*%-----------------|------------------------------------------------------------|
*#
*# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
*# of 1.32
*%-----------------|------------------------------------------------------------|
CONTINUOUS NASHYD    NHYD=["JR_HW"], DT=[1]min, AREA=[3680](ha),
                     DWF=[0](cms),  CN/C=[64], IA=[2.5](mm),
                     N=[3.0], TP=[7.13]hrs,
                     Continuous simulation parameters:
                     IaRECper=[4](hrs),
                     SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                     InterEventTime=[12](hrs)
                     Baseflow simulation parameters:
```

```
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
*#
*# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
*# of 1.32
*%-----------------|-----------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["SW_13"], DT=[1]min, AREA=[971](ha),
                    DWF=[0](cms),  CN/C=[61], IA=[2.5](mm),
                    N=[3.0], TP=[3.76]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
*#
*# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
*# of 1.80
*%-----------------|-----------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["JR_GWM"], DT=[1]min, AREA=[3074](ha),
                    DWF=[0](cms),  CN/C=[55], IA=[2.5](mm),
                    N=[3], TP=[11.33]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["JR_ASH"], DT=[1]min, AREA=[1781](ha),
                    DWF=[0](cms),  CN/C=[72], IA=[2.5](mm),
                    N=[3.0], TP=[3.91]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["SW_11"], DT=[1]min, AREA=[500](ha),
                    DWF=[0](cms),  CN/C=[66], IA=[2.5](mm),
                    N=[3.0], TP=[1.24]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
*#
*# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
*# of 1.80
*%-----------------|-----------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["NN_CK"], DT=[1]min, AREA=[1917](ha),
                    DWF=[0](cms),  CN/C=[66], IA=[2.5](mm),
```

```
                    N=[3.0], TP=[5.29]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
*#
*# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
*# of 1.52
*%-----------------|-----------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["SW_10"], DT=[1]min, AREA=[5666](ha),
                    DWF=[0](cms),  CN/C=[72], IA=[2.5](mm),
                    N=[3.0], TP=[8.00]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
*#
*# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
*# of 1.75
*%-----------------|-----------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["KG_CK"], DT=[1]min, AREA=[8376](ha),
                    DWF=[0](cms),  CN/C=[66], IA=[2.5](mm),
                    N=[3.0], TP=[11.66]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
*#
*# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
*# of 1.68
*%-----------------|-----------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["SW_9"], DT=[1]min, AREA=[1132](ha),
                    DWF=[0](cms),  CN/C=[70], IA=[2.5](mm),
                    N=[3.0], TP=[2.51]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
*#
*# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
*# of 1.82
*%-----------------|-----------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["NC_CK"], DT=[1]min, AREA=[4464](ha),
                    DWF=[0](cms),  CN/C=[62], IA=[2.5](mm),
                    N=[3.0], TP=[11.32]hrs,
                    Continuous simulation parameters:
```

```
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
*#
*# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
*# of 1.80
*%-----------------|-----------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["SW_8"], DT=[1]min, AREA=[131](ha),
                    DWF=[0](cms),  CN/C=[63], IA=[2.5](mm),
                    N=[3.0], TP=[0.90]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
*#
*# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
*# of 1.65
*%-----------------|-----------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["HB_DR"], DT=[1]min, AREA=[3854](ha),
                    DWF=[0](cms),  CN/C=[66], IA=[2.5](mm),
                    N=[3.0], TP=[8.42]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
*#
*# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
*# of 1.82
*%-----------------|-----------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["SW_7"], DT=[1]min, AREA=[3197](ha),
                    DWF=[0](cms),  CN/C=[57], IA=[2.5](mm),
                    N=[3.0], TP=[6.65]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
*#
*# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
*# of 1.75
*%-----------------|-----------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["SW_6"], DT=[1]min, AREA=[165](ha),
                    DWF=[0](cms),  CN/C=[67], IA=[2.5](mm),
                    N=[3.0], TP=[4.18]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
```

```
                        InterEventTime=[12](hrs)
                        Baseflow simulation parameters:
                        BaseFlowOption=[1] ,
                        InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                        VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|------------------------------------------------------------|
*#
*# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
*# of 1.67
*%-----------------|------------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["VG_DR"], DT=[1]min, AREA=[1332](ha),
                    DWF=[0](cms),  CN/C=[72], IA=[2.5](mm),
                    N=[3.0], TP=[5.95]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|------------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["SW_5"], DT=[1]min, AREA=[224](ha),
                    DWF=[0](cms),  CN/C=[77], IA=[2.5](mm),
                    N=[3.0], TP=[0.75]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|------------------------------------------------------------|
*#
*# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
*# of 1.20
*%-----------------|------------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["FL_CK"], DT=[1]min, AREA=[4945](ha),
                    DWF=[0](cms),  CN/C=[74], IA=[2.5](mm),
                    N=[3.0], TP=[4.45]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|------------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["SW_5A2"], DT=[1]min, AREA=[20](ha),
                    DWF=[0](cms),  CN/C=[81], IA=[2.5](mm),
                    N=[3.0], TP=[0.62]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|------------------------------------------------------------|
*#
*# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
*# of 1.61
*%-----------------|------------------------------------------------------------|
```

```
CONTINUOUS NASHYD   NHYD=["SW_5A1"], DT=[1]min, AREA=[1412](ha),
                    DWF=[0](cms),  CN/C=[75], IA=[2.5](mm),
                    N=[3.0], TP=[8.00]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["SW_4"], DT=[1]min, AREA=[585](ha),
                    DWF=[0](cms),  CN/C=[81], IA=[2.5](mm),
                    N=[3.0], TP=[1.75]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["LM_CK"], DT=[1]min, AREA=[1021](ha),
                    DWF=[0](cms),  CN/C=[80], IA=[2.5](mm),
                    N=[3.0], TP=[2.46]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["SW_2"], DT=[1]min, AREA=[177](ha),
                    DWF=[0](cms),  CN/C=[77], IA=[2.5](mm),
                    N=[3.0], TP=[0.75]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["SM_DR"], DT=[1]min, AREA=[1122](ha),
                    DWF=[0](cms),  CN/C=[81], IA=[2.5](mm),
                    N=[3.0], TP=[3.25]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["MO_DR"], DT=[1]min, AREA=[2737](ha),
                    DWF=[0](cms),  CN/C=[76], IA=[2.5](mm),
                    N=[3.0], TP=[3.03]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
```

```
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
*    -JFSA 2020 replaced SW_1 with a detailed model from Stantec Report 2007
*CONTINUOUS NASHYD   NHYD=["SW_1"], DT=[1]min, AREA=[3176](ha),
*                    DWF=[0](cms),  CN/C=[78], IA=[2.5](mm),
*                    N=[3.0], TP=[3.56]hrs,
*                    Continuous simulation parameters:
*                    IaRECper=[4](hrs),
*                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                    InterEventTime=[12](hrs)
*                    Baseflow simulation parameters:
*                    BaseFlowOption=[1] ,
*                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
*                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
*#
*# Routing hydrographs
*#
*# Starting with the addition of Jock River Headwater and Subwatershed 13
*#
ADD HYD             NHYDsum=["S_N13"], NHYDs to add=["JR_HW"+"SW_13"]
*%-----------------|-----------------------------------------------------------|
*#
*# Sum of hydrographs from Node 13 routed to Node 13A
*# (Approximated cross-section - see cross-section 258)
*# Use n=0.04 for summer conditions and n=0.025 for spring conditions
*#
ROUTE CHANNEL       NHYDout=["N13A"] ,NHYDin=["S_N13"],
                    RDT=[1](min),
                    CHLGTH=[9074](m),  CHSLOPE=[0.0220](%),
                                        FPSLOPE=[0.0220](%),
                    SECNUM=[1.0],       NSEG=[1]
                    ( SEGROUGH, SEGDIST (m))=[0.04,15.5] NSEG times
                    ( DISTANCE (m), ELEVATION (m))=
                          [-40, 132.5]
                          [-30, 132]
                          [-25, 131.5]
                          [-13, 130]
                          [-8, 127.00]
                          [-7, 126.50]
                          [-6, 126]
                          [-5.5, 125.50]
                          [0, 123.75]
                          [4.5, 125.50]
                          [6, 126]
                          [7.5, 126.5]
                          [9, 127]
                          [10, 127.5]
                          [11.5, 128.0]
                          [15.5, 129.5]
*%-----------------|-----------------------------------------------------------|
*#
*# Addition of Subwatershed Jock River at Goodwood Marsh to Node 13A
*#
ADD HYD             NHYDsum=["SN13A"], NHYDs to add=["N13A"+"JR_GWM"]
*%-----------------|-----------------------------------------------------------|
*#
*# Insertion of a reservoir to simulate the effects of the Goodwood Marsh
*#
ROUTE RESERVOIR     NHYDout=["RES_GM"] ,NHYDin=["SN13A"],
                    RDT=[1](min),
                          TABLE of ( OUTFLOW-STORAGE ) values
```

```
                                      (cms) - (ha-m)
                                    [   0.0 ,  0.0 ]
                                    [1.991, 2.144    ]
                                    [2.693, 39.826   ]
                                    [3.509, 81.697   ]
                                    [4.578, 318.774  ]
                                    [5.647, 594.947  ]
                                    [7.109, 910.219  ]
                                    [8.616, 1264.589  ]
                                    [10.371, 1658.057  ]
                                    [12.402, 2090.622 ]
                                    [22.056, 3462.487 ]
                                    [   -1  ,  -1  ]  (max twenty pts)
                          NHYDovf=["      "] ,
*%-----------------|------------------------------------------------------------|
*#
SAVE HYD            NHYD=["RES_GM"],  # OF PCYCLES=[-1],  ICASEsh=[-1]
                    HYD_FILENAME=["H_RESGM"]
                    HYD_COMMENT=["Outflow from Res GM"]
*%-----------------|------------------------------------------------------------|
*# Output of Reservoir Goodwood Marsh routed from Node 13A to Node 12
*# (Approximated cross-section - see cross-section 258)
*# Use n=0.04 for summer conditions and n=0.025 for spring conditions
ROUTE CHANNEL       NHYDout=["N12"] ,NHYDin=["RES_GM"] ,
                    RDT=[1](min),
                    CHLGTH=[5926](m),  CHSLOPE=[0.0759](%),
                                        FPSLOPE=[0.0759](%),
                    SECNUM=[1.0],       NSEG=[1]
                    ( SEGROUGH, SEGDIST (m))=[0.04,15.5] NSEG times
                    ( DISTANCE (m), ELEVATION (m))=
                          [-40, 132.5]
                          [-30, 132]
                          [-25, 131.5]
                          [-13, 130]
                          [-8, 127.00]
                          [-7, 126.50]
                          [-6, 126]
                          [-5.5, 125.50]
                          [0, 123.75]
                          [4.5, 125.50]
                          [6, 126]
                          [7.5, 126.5]
                          [9, 127]
                          [10, 127.5]
                          [11.5, 128.00]
                          [15.5, 129.5]
*%-----------------|------------------------------------------------------------|
*#
*# Addition of Subwatershed Jock River at Ashton to Node 12
*#
ADD HYD             NHYDsum=["S_N12"], NHYDs to add=["N12"+"JR_ASH"]
SAVE HYD            NHYD=["S_N12"],  # OF PCYCLES=[-1],  ICASEsh=[-1]
                    HYD_FILENAME=["H_SN12"]
                    HYD_COMMENT=["flow at S_N12 near Ashton"]
*%-----------------|------------------------------------------------------------|
*#
*# Sum of hydrographs from Node 12 routed to Node 11
*# (Approximated cross-section - see cross-section 258)
*# Use n=0.04 for summer conditions and n=0.025 for spring conditions
*ROUTE CHANNEL       NHYDout=["N11"] ,NHYDin=["S_N12"] ,
*                    RDT=[1](min),
*                    CHLGTH=[972](m),  CHSLOPE=[0.0514](%),
*                                        FPSLOPE=[0.0514](%),
*                    SECNUM=[1.0],       NSEG=[1]
*                    ( SEGROUGH, SEGDIST (m))=[0.04,15.5] NSEG times
*                    ( DISTANCE (m), ELEVATION (m))=
```

```
*                          [-40, 132.5]
*                          [-30, 132]
*                          [-25, 131.5]
*                          [-13, 130]
*                          [-8, 127.00]
*                          [-7, 126.50]
*                          [-6, 126]
*                          [-5.5, 125.50]
*                          [0, 123.75]
*                          [4.5, 125.50]
*                          [6, 126]
*                          [7.5, 126.5]
*                          [9, 127]
*                          [10, 127.5]
*                          [11.5, 128.00]
*                          [15.5, 129.5]
*%-----------------|----------------------------------------------------------|
*#
*# Sum of hydrographs from Node 12 routed to Node 11 with Dummy section 248
*#
ROUTE CHANNEL       NHYDout=["Dum11"] ,NHYDin=["S_N12"] ,
                    RDT=[1](min),
                    CHLGTH=[972](m),  CHSLOPE=[0.054](%),
                                        FPSLOPE=[0.054](%),
                    SECNUM=[1.0],       NSEG=[1]
                    ( SEGROUGH, SEGDIST (m))=[0.04,15.5] NSEG times
                    ( DISTANCE (m), ELEVATION (m))=
                          [-40, 132.5]
                          [-30, 132]
                          [-25, 131.5]
                          [-13, 130]
                          [-8, 127.00]
                          [-7, 126.50]
                          [-6, 126]
                          [-5.5, 125.50]
                          [0, 123.75]
                          [4.5, 125.50]
                          [6, 126]
                          [7.5, 126.5]
                          [9, 127]
                          [10, 127.5]
                          [11.5, 128.00]
                          [15.5, 129.5]
*%-----------------|----------------------------------------------------------|
*#
*# Addition of Subwatershed 11 and No Name Creek to Node 11
*#
ADD HYD             NHYDsum=["S_N11"], NHYDs to add=["Dum11"+"SW_11"+"NN_CK"]
*%-----------------|----------------------------------------------------------|
*#
*# Sum of hydrographs from Node 11 routed to Node 10
*# Section 1
*#
ROUTE CHANNEL       NHYDout=["N10"] ,NHYDin=["S_N11"] ,
                    RDT=[1](min),
                    CHLGTH=[14028](m),  CHSLOPE=[0.1568](%),
                                        FPSLOPE=[0.1568](%),
                    SECNUM=[1.0],       NSEG=[5]
                    ( SEGROUGH, SEGDIST (m))=
                     [0.04,-52.82
                      0.1,-6.47
                      -0.05,6.47
                      0.1,45.36
                      0.04,423.88] NSEG times
                   ( DISTANCE (m), ELEVATION (m))=
                          [-226.24 ,112.50]
```

```
                          [-167.50 ,111.50]
                          [-106.81 ,111.00]
                          [-92.37 ,110.00]
                          [-52.82 ,109.00]
                          [-24.90, 109.00]
                          [-17.02, 108.50]
                          [-6.47, 108.00]
                          [6.47, 108.00]
                          [15.67, 108.50]
                          [18.95, 109.00]
                          [45.36, 109.50]
                          [120.79, 110.00]
                          [145.72, 111.00]
                          [181.56, 111.50]
                          [423.88, 112.50]
*%-----------------|-----------------------------------------------------------|
*#
*# Addition of Subwatershed 10 to Node 10
*#
ADD HYD             NHYDsum=["S_N10"], NHYDs to add=["N10"+"SW_10"]
*%-----------------|-----------------------------------------------------------|
SAVE HYD            NHYD=["S_N10"],  # OF PCYCLES=[-1],  ICASEsh=[-1]
                    HYD_FILENAME=["H_SN10"]
                    HYD_COMMENT=["flow at S_N10: N10 + SW_10"]
*%-----------------|-----------------------------------------------------------|
*# Addition of Kings Creek to S_N10
*#
ADD HYD             NHYDsum=["S_N10A"], NHYDs to add=["S_N10"+"KG_CK"]
*%-----------------|-----------------------------------------------------------|
*#
*# Sum of hydrographs from Node 10 routed to Node 9
*# Section 2
*#
ROUTE CHANNEL       NHYDout=["N9"] ,NHYDin=["S_N10A"] ,
                    RDT=[1](min),
                    CHLGTH=[3982](m),  CHSLOPE=[0.0753](%),
                                        FPSLOPE=[0.0753](%),
                    SECNUM=[1.0],       NSEG=[4]
                    ( SEGROUGH, SEGDIST (m))=
                      [0.04,-30.27
                       0.05,-18.42
                      -0.05,18.42
                      0.04,131.58] NSEG times
                    ( DISTANCE (m), ELEVATION (m))=
                          [-446.74, 106.00]
                          [-415.68, 105.50]
                          [-285.40, 105.00]
                          [-173.77, 104.50]
                          [-144.95, 104.00]
                          [-111.18, 103.50]
                          [-94.06, 103.00]
                          [-71.02, 102.50]
                          [-30.27, 102.00]
                          [-19.33, 100.00]
                          [-18.42, 99.50]
                          [18.42, 99.50]
                          [20.77, 100.00]
                          [27.93, 101.00]
                          [52.29, 101.00]
                          [68.80, 101.50]
                          [79.66, 103.00]
                          [91.50, 103.50]
                          [131.58, 104.00]
*%-----------------|-----------------------------------------------------------|
*#
*# Addition of Subwatershed 9 and Nichols Creek to Node 9
```

```
*#
ADD HYD              NHYDsum=["S_N9"], NHYDs to add=["N9"+"SW_9"+"NC_CK"]
*%-----------------|-----------------------------------------------------------|
*#
*# Sum of hydrographs from Node 9 routed to Node 8
*# Section 3
*#
ROUTE CHANNEL        NHYDout=["N8"] ,NHYDin=["S_N9"] ,
                     RDT=[1](min),
                     CHLGTH=[2269](m),  CHSLOPE=[0.0882](%),
                                         FPSLOPE=[0.0882](%),
                     SECNUM=[1.0],       NSEG=[3]
                     ( SEGROUGH, SEGDIST (m))=
                       [0.1,-17.99
                       -0.045,17.31
                       0.1,456.58] NSEG times
                     ( DISTANCE (m), ELEVATION (m))=
                           [-201.19,100.50]
                           [-135.21, 100.00]
                           [-94.83, 99.50]
                           [-67.05, 99.00]
                           [-17.99, 98.50]
                           [-16.02, 98.00]
                           [-13.95, 97.50]
                           [13.95, 97.50]
                           [15.64, 98.00]
                           [17.31, 98.50]
                           [162.02, 98.50]
                           [172.89 ,99.00]
                           [314.38, 99.00]
                           [343.78, 99.50]
                           [365.67, 100.00]
                           [376.68, 100.00 ]
                           [393.11, 99.50]
                           [404.97, 99.50]
                           [431.70, 100.00]
                           [456.58, 100.50 ]
*%-----------------|-----------------------------------------------------------|
*#
*# Addition of Subwatershed 8 and Hobb's Drain to Node 8
*#
ADD HYD              NHYDsum=["S_N8"], NHYDs to add=["N8"+"SW_8"+"HB_DR"]
*%-----------------|-----------------------------------------------------------|
*#
*# Sum of hydrographs from Node 8 routed to Node 7
*# Section 4
*#
ROUTE CHANNEL        NHYDout=["N7"] ,NHYDin=["S_N8"],
                     RDT=[1](min),
                     CHLGTH=[3750](m),  CHSLOPE=[0.0533](%),
                                         FPSLOPE=[0.0533](%),
                     SECNUM=[1.0],       NSEG=[3]
                     ( SEGROUGH, SEGDIST (m))=
                       [0.12,-18.11
                       -0.07,17.22
                       0.12,590.05] NSEG times
                     ( DISTANCE (m), ELEVATION (m))=
                           [-433.21, 102.00]
                           [-425.34, 101.50]
                           [-377.56, 101.50]
                           [-366.23, 101.00]
                           [-202.60, 100.50]
                           [-96.25, 99.50]
                           [-68.36 99.00]
                           [-18.11, 98.50]
                           [-13.81, 97.50]
```

```
                             [13.81, 97.50]
                             [17.22, 98.50]
                             [161.95, 98.50]
                             [173.11, 99.00]
                             [314.05, 99.00]
                             [365.52, 100.00]
                             [404.70, 99.50]
                             [476.74, 100.50]
                             [502.31, 101.00]
                             [584.69, 101.00]
                             [585.79, 101.00]
                             [590.05, 102.00]
*%-----------------|------------------------------------------------------------|
*#
*# Addition of Subwatershed 7 to Node 7
*#
ADD HYD                NHYDsum=["S_N7"], NHYDs to add=["N7"+"SW_7"]
*%-----------------|------------------------------------------------------------|
SAVE HYD               NHYD=["S_N7"],  # OF PCYCLES=[-1],  ICASEsh=[-1]
                       HYD_FILENAME=["H_SN7"]
                       HYD_COMMENT=["flow at S_N7: N7 + SW_7"]
*%-----------------|------------------------------------------------------------|
*# Insertion of a reservoir to simulate the effects of the Richmond Fen.
*# Storage area and volumes were estimated from available topo maps.
*# Release rate from fen was assumed to be controlled by the downstream
*# river cross-section for summer conditions.  It is was assumed that for up to
*# 0.75 m of water, the main channel of the river provided the storage.  Above
*# this depth, the wetland starts to signigicantly store water.
*#
ROUTE RESERVOIR        NHYDout=["RES_RF"] ,NHYDin=["S_N7"] ,
                       RDT=[1](min),
                             TABLE of ( OUTFLOW-STORAGE ) values
                                         (cms) - (ha-m)
                             TABLE of ( OUTFLOW-STORAGE ) values
                                         (cms) - (ha-m)
                                       [   0.0 ,     0.0 ]
                                       [0.9051,    2.40]
                                       [2.907,     4.13]
                                       [9.744,     9.18]
                                       [20.304,   14.96]
                                       [34.167,  310.21]
                                       [74.993,  605.46]
                                       [104.876, 900.71]
                                       [140.56, 2892.00]
                                       [225.00, 3615.63]
                                       [   -1  ,  -1  ]  (max twenty pts)
                             NHYDovf=["      "] ,
*%-----------------|------------------------------------------------------------|
SAVE HYD               NHYD=["RES_RF"],  # OF PCYCLES=[-1],  ICASEsh=[-1]
                       HYD_FILENAME=["H_ResRF"]
                       HYD_COMMENT=["outflow of Richmond Fen"]
*%-----------------|------------------------------------------------------------|
*#
*# Sum of hydrographs from Node 7 routed to Node 6
*# Section 5
*#
ROUTE CHANNEL          NHYDout=["N6"] ,NHYDin=["RES_RF"] ,
                       RDT=[1](min),
                       CHLGTH=[3056](m),  CHSLOPE=[0.0818](%),
                                          FPSLOPE=[0.0818](%),
                       SECNUM=[1.0],       NSEG=[5]
                       ( SEGROUGH, SEGDIST (m))=
                         [0.025,-70.8
                         0.1,-23.9
                         -0.05,23.9
                         0.06,39.8
```

```
                      0.05,96.3] NSEG times
                    ( DISTANCE (m), ELEVATION (m))=
                                     [-100.8, 97.00]
                                     [-70.8, 96.50]
                                     [-52.0, 96.00]
                                     [-35.1, 95.50]
                                     [-30.6, 95.00]
                                     [-23.9, 94.54]
                                     [23.9, 94.54]
                                     [39.8, 95.00]
                                     [50.4, 95.50]
                                     [93.5, 96.00]
                                     [94.9, 96.50]
                                     [96.3, 97.00]
*%-----------------|------------------------------------------------------------|
*#
*# Addition of Subwatershed 6 and Van Gaal Drain to Node 6
*#
ADD HYD             NHYDsum=["S_N6"], NHYDs to add=["N6"+"SW_6"+"VG_DR"]
*%-----------------|------------------------------------------------------------|
*#
*# Sum of hydrographs from Node 6 routed to Node 5
*# Section 6
*#
ROUTE CHANNEL       NHYDout=["N5"] ,NHYDin=["S_N6"] ,
                    RDT=[1](min),
                    CHLGTH=[1852](m),  CHSLOPE=[0.0540](%),
                                        FPSLOPE=[0.0540](%),
                    SECNUM=[1.0],       NSEG=[3]
                    ( SEGROUGH, SEGDIST (m))=
                      [0.035,-131.59
                      -0.045,48.96
                      0.1,239.04] NSEG times
                    ( DISTANCE (m), ELEVATION (m))=
                                     [-686.30, 94.50]
                                     [-675.70, 94.00]
                                     [-492.52, 93.00]
                                     [-467.28, 94.00]
                                     [-131.59, 94.00]
                                     [-92.79, 92.50]
                                     [-18.06, 91.00]
                                     [18.06, 91.00]
                                     [43.47, 92.50]
                                     [48.96, 94.00]
                                     [177.43, 94.00]
                                     [239.04,94.50]
*%-----------------|------------------------------------------------------------|
*#
*# Addition of Subwatershed 5 and Flowing Creek to Node 5
*#
ADD HYD             NHYDsum=["S_N5"], NHYDs to add=["N5"+"SW_5"+"FL_CK"]
*%-----------------|------------------------------------------------------------|
*#
*# Sum of hydrographs from Node 5 routed to Node 5A
*# Section 7
*#
ROUTE CHANNEL       NHYDout=["N5A"] ,NHYDin=["S_N5"] ,
                    RDT=[1](min),
                    CHLGTH=[556](m),  CHSLOPE=[0.0900](%),
                                        FPSLOPE=[0.0900](%),
                    SECNUM=[1.0],       NSEG=[4]
                    ( SEGROUGH, SEGDIST (m))=
                      [0.04,-41.5
                      0.1,-14.0
                      -0.045,14.0
                      0.1,41.1] NSEG times
```

```
                    ( DISTANCE (m), ELEVATION (m))=
                                 [-275.8, 93.00]
                                 [-248.6, 92.50]
                                 [-237.0, 92.00]
                                 [-219.3, 91.50]
                                 [-202.1, 91.50]
                                 [-186.0, 92.00]
                                 [-129.2, 92.00]
                                 [-117.6, 91.50]
                                 [-100.6, 91.00]
                                 [-41.5, 91.00]
                                 [-20.0, 91.00]
                                 [-14.0, 90.54]
                                 [14.0, 90.54]
                                 [15.3, 91.00]
                                 [17.3, 91.50]
                                 [38.4, 92.00]
                                 [39.8, 92.50]
                                 [41.1, 93.00]
*%-----------------|-------------------------------------------------------------|
*#
*# Addition of Subwatershed 5A1 and Subwatershed 5A2 to Node 5A
*#
ADD HYD             NHYDsum=["S_N5A"], NHYDs to add=["N5A"+"SW_5A2"+"SW_5A1"]
*%-----------------|-------------------------------------------------------------|
*#
*# Sum of hydrographs from Node 5A routed to Node 4
*# Section 8
*#
ROUTE CHANNEL       NHYDout=["N4"] ,NHYDin=["S_N5A"] ,
                    RDT=[1](min),
                    CHLGTH=[4630](m),  CHSLOPE=[0.0432](%),
                                        FPSLOPE=[0.0432](%),
                    SECNUM=[1.0],       NSEG=[3]
                    ( SEGROUGH, SEGDIST (m))=
                      [0.05,-28.2
                      -0.035,28.2
                      0.05,173.1] NSEG times
                    ( DISTANCE (m), ELEVATION (m))=
                                 [-38.9, 92.00]
                                 [-35.8, 91.50]
                                 [-33.3, 91.00]
                                 [-28.2, 90.50]
                                 [-15.0, 87.48]
                                 [-5.0, 88.34]
                                 [5.0, 86.20]
                                 [15.0, 88.55]
                                 [28.2, 90.50]
                                 [29.7, 91.00]
                                 [46.5, 91.00]
                                 [127.8, 91.00]
                                 [148.7, 91.50]
                                 [173.1, 92.00]
*%-----------------|-------------------------------------------------------------|
*#
*# Addition of Subwatershed 4 and Leamy Creek to Node 4
*#
ADD HYD             NHYDsum=["S_N4"], NHYDs to add=["N4"+"SW_4"+"LM_CK"]
SAVE HYD            NHYD=["S_N4"],  # OF PCYCLES=[-1],  ICASEsh=[1]
                    HYD_COMMENT=["flow at S_N4"]
*%-----------------|-------------------------------------------------------------|
*#
*# Sum of hydrographs from Node 4 routed to Node 2
*# Section 9
*#
ROUTE CHANNEL       NHYDout=["N2"] ,NHYDin=["S_N4"] ,
```

```
                    RDT=[1](min),
                    CHLGTH=[1667](m),  CHSLOPE=[0.0600](%),
                                        FPSLOPE=[0.0600](%),
                    SECNUM=[1.0],       NSEG=[4]
                    ( SEGROUGH, SEGDIST (m))=
                      [0.1,-28.0
                      -0.04,28.4
                      0.06,31.7
                      0.04,80.2] NSEG times
                    ( DISTANCE (m), ELEVATION (m))=
                           [-36.3, 92.00]
                           [-32.6, 91.50]
                           [-30.2, 91.00]
                           [-28.0, 90.45]
                           [-15.0, 87.48]
                           [-5.0, 88.34]
                           [5.0, 86.20]
                           [15.0, 88.55]
                           [28.0, 90.45]
                           [28.4, 90.50]
                           [30.4, 91.00]
                           [31.7, 91.50]
                           [80.2, 92.00]
*%-----------------|------------------------------------------------------------|
*#
*# Addition of Subwatershed 2 with Monohan Drain and Smith Drain to Node 2
*#
ADD HYD             NHYDsum=["S_N2"], NHYDs to add=["N2"+"SW_2"+"SM_DR"+"MO_DR"]
*%-----------------|------------------------------------------------------------|
SAVE HYD            NHYD=["S_N2"],  # OF PCYCLES=[-1],  ICASEsh=[-1]
                    HYD_FILENAME=["H_SN2"]
                    HYD_COMMENT=["flow at S_N2 Jock River Gauge at Moodie Dr."]
*%-----------------|------------------------------------------------------------|
*#
*# Sum of hydrographs from Node 2 routed to Node 1
*# Section 10
*#
*#*****************************************************************************
*%READ HYD            NHYD=["S_N2"],
*%                   HYD_FILENAME=["H-S_N2"]
*%-----------------|------------------------------------------------------------|
*#
*# Hydrograph from Node 2 routed to Node 416
*# Channel X-Section obtained from RVCA Hydraulic Model - Station 9025
*#
ROUTE CHANNEL       NHYDout=["N_416"] ,NHYDin=["S_N2"] ,
                    RDT=[1](min),
                    CHLGTH=[2327](m),  CHSLOPE=[0.0498](%),
                                        FPSLOPE=[0.0498](%),
                    SECNUM=[1.0],       NSEG=[3]
                    ( SEGROUGH, SEGDIST (m))=
                      [0.075,-23.96
                      -0.055,23.96
                      0.075,157.38]  NSEG times
                    ( DISTANCE (m), ELEVATION (m))=
                    [-336.97,93.5]
                    [-318.85,93]
                    [-259,92.5]
                    [-133.18,92]
                    [-33.17,92]
                    [-27.21,92]
                    [-26.14,91.5]
                    [-24.99,91]
                    [-23.96,90.5]
                    [-14.33,88.26]
                    [-0.68,88.12]
```

```
                    [14.33,88.26]
                    [23.96,90.5]
                    [32.12,91]
                    [43.74,91.5]
                    [57.09,92]
                    [73.53,92.5]
                    [108.27,93]
                    [125.88,93.5]
                    [144.81,94]
                    [157.38,94.5]
*%-----------------|-----------------------------------------------------------|
*#******************************************************************************
*#    Catchment SW-1a
*#    - Portion of RVCA catchment SW_1 outside of Reach 1 subwatershed
*#    - Undeveloped agricultural land
*#******************************************************************************
CONTINUOUS NASHYD   NHYD=["SW_1a"], DT=[1]min, AREA=[536.42](ha),
                    DWF=[0](cms), CN/C=[72],  IA=[4.67](mm),
                    N=[3], TP=[2.79]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
*   -JFSA 2021-02-25  "S-1-Okeefe" is a part of S-1 sub-catchment. It is moved to drain before station 7245 on Jock River
*CONTINUOUS STANDHYD NHYD=["S-1-Okeefe"], DT=[1](min), AREA=[44.93](ha), XIMP=[0.65], TIMP=[0.65], DWF=[0](cms),
*                    LOSS=[2], SCS curve number CN=[75], Pervious surfaces: IAper=[4.67](mm), SLPP=[2.0](%),
*                    LGP=[40](m), MNP=[0.25], SCP=[0](min), Impervious surfaces: IAimp=[1.57](mm), SLPI=[0.75](%),
*                    LGI=[547.296](m), MNI=[0.013], SCI=[0](min),
*                    Continuous simulation parameters:
*                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
*                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                    InterEventTime=[12](hrs),   END=-1
*%-----------------|-----------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["S-1-Okeefe"], DT=[1]min, AREA=[44.93](ha),
                    DWF=[0](cms), CN/C=[77],  IA=[4.67](mm),
                    N=[3], TP=[1.049]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
*COMPUTE DUALHYD     NHYDin=["S-1-Okeefe"], CINLET=[4.796](cms), NINLET=[1],
*                    MajNHYD=["S-1-OkMJ"]
*                    MinNHYD=["S-1-OkMN"]
*                    TMJSTO=[9999999](cu-m)
*%-----------------|-----------------------------------------------------------|
*ADD HYD             NHYDsum=["S-1-OkS"], NHYDs to add=["S-1-OkMJ"+"S-1-OkMN"]
*%-----------------|-----------------------------------------------------------|
*ROUTE RESERVOIR     NHYDout=["S-1-OkSR"] ,NHYDin=["S-1-OkS"] ,
*                    RDT=[1](min),
*                          TABLE of ( OUTFLOW-STORAGE ) values
*                                      (cms) - (ha-m)
*                                    [ 0.0     , 0.0 ]
```

```
*                                    [ 0.5370, 1.7917 ]
*                                    [    -1  ,  -1    ]  (max twenty pts)
*                          NHYDovf=["S-1-OkSovf"]
*%-----------------|------------------------------------------------------------|
ADD HYD                  NHYDsum=["SN_416"], NHYDs to add=["N_416"+"SW_1a"+"S-1-Okeefe"]
*%-----------------|------------------------------------------------------------|
SAVE HYD                 NHYD=["SN_416"],   # OF PCYCLES=[-1],  ICASEsh=[1]
                         HYD_COMMENT=["Total Flows at Highway 416"]
*%-----------------|------------------------------------------------------------|
*#
*# Hydrograph from Node 416 routed to Node at Okeefe drain
*# Channel X-Section obtained from RVCA Hydraulic Model - Station 7245
*#
ROUTE CHANNEL            NHYDout=["N_OK"] ,NHYDin=["SN_416"] ,
                         RDT=[1](min),
                         CHLGTH=[497](m),  CHSLOPE=[0.3018](%),
                                             FPSLOPE=[0.3018](%),
                         SECNUM=[1.0],       NSEG=[3]
                         ( SEGROUGH, SEGDIST (m))=
                           [0.075,-19.40
                           -0.055,19.40
                           0.075,377.02] NSEG times
                         ( DISTANCE (m), ELEVATION (m))=
                         [-1061.41, 92.50]
                         [-945.91, 92.00]
                         [-783.64, 91.50]
                         [-136.74, 91.00]
                         [-86.04, 91.00]
                         [-20.86, 91.00]
                         [-20.18, 90.50]
                         [-19.40, 90.00]
                         [-11.68, 86.89]
                         [0.00, 86.10]
                         [12.09, 86.81]
                         [19.40, 90.00]
                         [34.68, 90.50]
                         [60.56, 91.00]
                         [170.14, 91.00]
                         [175.05, 90.50]
                         [180.29, 90.00]
                         [193.41, 90.00]
                         [195.98, 90.50]
                         [377.02, 92.50]
*%-----------------|------------------------------------------------------------|
*#*****************************************************************************
*#    Catchment OKEEFE
*#    - To O'Keefe drain (north of the Jock)
*#    - Developed with assumed 43% imp.
*#    - 2020-12-01 add Okeefe model (Area 513.02 HA) instead of current Okeefe (Area 513.02 HA)
*#    - 2020-11-20 Okeefe detailed model was added as per the NOVATECH SWMHYMO model (Citi-Gate 2014).
*%-----------------|------------------------------------------------------------|
*POST DEVELOPMENT CONDITIONS
*%-----------------|------------------------------------------------------------|
*#*****************************************************************************
CONTINUOUS NASHYD        NHYD=["O-1"], DT=[1]min, AREA=[63.72](ha),
                         DWF=[0](cms), CN/C=[61], IA=[6.2](mm), N=[3], TP=[.9]hrs,
                         Continuous simulation parameters:
                         IaRECper=[4](hrs),
                         SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                         InterEventTime=[12](hrs)
                         Baseflow simulation parameters:
                         BaseFlowOption=[1] ,
                         InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                         VHydCond=[0.055](mm/hr),   END=-1
```

```
*%-----------------|------------------------------------------------------------------------------------------|
*ROUTE FLOW THROUGH AREA O-2
ROUTE CHANNEL         NHYDout=["O-1R"], NHYDin=["O-1"], RDT=[1](min),
                      CHLGTH=[960](m), CHSLOPE=[0.63](%), FPSLOPE=[0.63](%),
                      SECNUM=[1], NSEG=[3]
                      ( SEGROUGH, SEGDIST (m))=[0.06,4 -.043,6 0.06,10] NSEG times
                      ( DISTANCE (m), ELEVATION (m))=[0.00, 2.0]
                      [0.0, 2.0]
                      [4.0, 0.0]
                      [6.0, 0.0]
                      [10.0, 2.0]
*%-----------------|---------------------------------------------------------------|
CONTINUOUS NASHYD     NHYD=["O-2"], DT=[1]min, AREA=[28.61](ha),
                      DWF=[0](cms), CN/C=[57], IA=[5.2](mm), N=[3], TP=[1.1]hrs,
                     Continuous simulation parameters:
                      IaRECper=[4](hrs),
                      SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                      InterEventTime=[12](hrs)
                      Baseflow simulation parameters:
                      BaseFlowOption=[1] ,
                      InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                      VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|---------------------------------------------------------------|
CONTINUOUS NASHYD     NHYD=["O-4"], DT=[1]min, AREA=[46.94](ha),
                      DWF=[0](cms), CN/C=[49], IA=[9.2](mm), N=[3], TP=[0.9]hrs,
                      Continuous simulation parameters:
                      IaRECper=[4](hrs),
                      SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                      InterEventTime=[12](hrs)
                      Baseflow simulation parameters:
                      BaseFlowOption=[1] ,
                      InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                      VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|---------------------------------------------------------------|
*TOTAL EXTERNAL FLOW NORTH OF O'KEEFE CT. CROSSING
ADD HYD               NHYDsum=["OKF-N"], NHYDs to add=["O-1R"+"O-2"+"O-4"]
*%-----------------|---------------------------------------------------------------|
*ROUTE FLOW THROUGH AREA O-6
ROUTE CHANNEL         ROUTE CHANNEL NHYDout=["OKF-NR"], NHYDin=["OKF-N"], RDT=[1](min),
                      CHLGTH=[210](m), CHSLOPE=[.81](%), FPSLOPE=[.81](%),
                      SECNUM=[1], NSEG=[3]
                      ( SEGROUGH, SEGDIST (m))=[0.043,22.43 -0.043,25.07
                      0.043,45.54] NSEG times
                      ( DISTANCE (m), ELEVATION (m))=[0.00, 3.73]
                      (14.62, 1.56)
                      (18.41, 1.44)
                      (22.43, 0.00)
                      (25.07, 0.70)
                      (29.10, 1.79)
                      (33.73, 2.71)
                      (45.54, 3.58)
*%-----------------|---------------------------------------------------------------|
CONTINUOUS NASHYD     NHYD=["O-6"], DT=[1]min, AREA=[16.46](ha),
                      DWF=[0](cms), CN/C=[43], IA=[9.2](mm), N=[3], TP=[0.7]hrs,
                      Continuous simulation parameters:
                      IaRECper=[4](hrs),
                      SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                      InterEventTime=[12](hrs)
                      Baseflow simulation parameters:
                      BaseFlowOption=[1] ,
                      InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                      VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|---------------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["O-3"], DT=[1](min), AREA=[39.67](ha), XIMP=[0.15],
TIMP=[0.30], DWF=[0](cms),
```

```
                     LOSS=[2], SCS curve number CN=[50], Pervious surfaces:
                     IAper=[4.67](mm), SLPP=[0.32](%),
                     LGP=[440](m), MNP=[0.035], SCP=[0](min), Impervious surfaces:
                     IAimp=[1.57](mm), SLPI=[0.32](%),
                     LGI=[1880](m), MNI=[0.013], SCI=[0](min),
                     Continuous simulation parameters:
                     IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                     SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                     InterEventTime=[12](hrs),   END=-1
*%-----------------|-------------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["O-5"], DT=[1](min), AREA=[60.63](ha), XIMP=[0.13],
TIMP=[0.26], DWF=[0](cms),
                     LOSS=[2], SCS curve number CN=[61],
                     Pervious surfaces: IAper=[4.67](mm), SLPP=[1.38](%),
                     LGP=[550](m), MNP=[0.035], SCP=[0](min), Impervious surfaces:
                     IAimp=[1.57](mm), SLPI=[1.38](%),
                     LGI=[1450](m), MNI=[0.013], SCI=[0](min),
                     Continuous simulation parameters:
                     IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                     SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                     InterEventTime=[12](hrs),   END=-1
*%-----------------|-------------------------------------------------------------|
*TOTAL EXTERNAL FLOWS WEST OF THE SITE AND NORTH OF O'KEEFE CRT
*%-----------------|-------------------------------------------------------------|
ADD HYD              NHYDsum=["PT1"], NHYDs to add=["OKF-NR"+"O-3"+"O-5"+"O-6"]
*%-----------------|-------------------------------------------------------------|
CONTINUOUS NASHYD    NHYD=["O-7"], DT=[1]min, AREA=[5.28](ha),
                     DWF=[0](cms), CN/C=[54], IA=[7.5](mm), N=[3], TP=[0.6]hrs,
                     Continuous simulation parameters:
                     IaRECper=[4](hrs),
                     SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                     InterEventTime=[12](hrs)
                     Baseflow simulation parameters:
                     BaseFlowOption=[1] ,
                     InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                     VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-------------------------------------------------------------|
*ANALYSIS POINT 1 - TOTAL FLOW NORTH OF FALLOWFIELD DR. AND O'KEEFE CRT.
ADD HYD              NHYDsum=["FF"], NHYDs to add=["PT1"+"O-7"]
*%-----------------|-------------------------------------------------------------|
*ROUTE FLOW through O'Keefe Drain 1
ROUTE CHANNEL        NHYDout=["DRAIN1"], NHYDin=["FF"], RDT=[1](min),
                     CHLGTH=[302]{m), CHSLOPE=[1.00](%), FPSLOPE=[1.00](%),
                     SECNUM=[1], NSEG=[3]
                     ( SEGROUGH, SEGDIST (m))=[0.07,13.45 -0.043,16.55 0.07,30.00] NSEG
                     times
                     ( DISTANCE (m), ELEVATION (m))=[0.00, 1.70]
                     (3.45, 0.60)
                     (13.45, 0.50)
                     (14.45, 0.00)
                     (15.55, 0.00)
                     (16.55, 0.50)
                     (26.55, 0.60)
                     (30.00, 1.70)
*%-----------------|-------------------------------------------------------------|
CONTINUOUS NASHYD    NHYD=["D1"], DT=[1]min, AREA=[1.17](ha),
                     DWF=[0](cms), CN/C=[84], IA=[9.0](mm), N=[3], TP=[0.28]hrs,
                     Continuous simulation parameters:
                     IaRECper=[4](hrs),
                     SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                     InterEventTime=[12](hrs)
                     Baseflow simulation parameters:
                     BaseFlowOption=[1] ,
                     InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                     VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-------------------------------------------------------------|
```

```
CONTINUOUS STANDHYD NHYD=["A1"], DT=[1]min, AREA=[2.50](ha), XIMP=[0.68], TIMP=[0.85],
DWF=[0](cms), LOSS=[1]:
                    Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                    F=[0.00](mm),
                    Pervious   areas: IAper=[4.67](mm), SLPP=[0.5](%), LGP=[50](m),
                    MNP=[0.250], SCP=[0](min),
                    Impervious areas: IAimp=[1.57](mm), SLPI=[0.5](%),
                    LGI=[223.607](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                    END=-1
*%-----------------|------------------------------------------------------------|
ROUTE RESERVOIR     NHYDout=["A1-STR"], NHYDin=["A1"], RDT=[1](min),
                         TABLE of ( OUTFLOW-STORAGE ) values
                                   (cms) - (ha-m)
                                 [ 0.000 , 0.000 ]
                                 [ 0.035 , 0.038 ]
                                 [ 0.072 , 0.051 ]
                                 [ 0.100 , 0.059 ]
                                 [ 0.125 , 0.070 ]
                                 [ 0.160 , 0.074 ]
                                 [ 0.185 , 0.081 ]
                                 [ -1 , -1 ] (max twenty pts)
                                 NHYDovf=["A1-OVF"]
*%-----------------|------------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["ST-2"], DT=[1]min, AREA=[0.59](ha), XIMP=[0.46],
TIMP=[0.57], DWF=[0](cms), LOSS=[1]:
                    Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                    F=[0.00](mm),
                    Pervious   areas: IAper=[4.67](mm), SLPP=[0.5](%), LGP=[50](m),
                    MNP=[0.250], SCP=[0](min),
                    Impervious areas: IAimp=[1.57](mm), SLPI=[0.5](%),
                    LGI=[108.628](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                    END=-1
*%-----------------|------------------------------------------------------------|
ROUTE RESERVOIR     NHYDout=["ST2STR"], NHYDin=["ST-2"], RDT=[1](min),
                         TABLE of ( OUTFLOW-STORAGE ) values
                                   (cms) - (ha-m)
                                 [ 0.000 , 0.0000 ]
                                 [ 0.052 , 0.0010 ]
                                 [ 0.053 , 0.0080 ]
                                 [ -1 , -1 ] (max twenty pts)
                                 NHYDovf=["ST2OVF"]
*%-----------------|------------------------------------------------------------|
*%-----------------|------------------------------------------------------------|
*TOTAL FLOW NORTH OF STRANDHERD DR. (EAST BRANCH) CROSSING
*%-----------------|------------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["O-8"], DT=[1]min, AREA=[60.55](ha),
                    DWF=[0](cms), CN/C=[69], IA=[4.0](mm), N=[3], TP=[1.0]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|------------------------------------------------------------|
ROUTE PIPE          PTYPE=[2]rect, NHYDout=["O8PIPE"], RNUMBER=[1], PWIDTH=[1800](mm),
PHEIGHT=[1200](mm), PLNGTH=[335.1](m),
                    PROUGH=[0.013], PSLOPE=[0.001](m/m), NHYDin=["O-8"], RDT=[1](min)
*%-----------------|------------------------------------------------------------|
*%-----------------|------------------------------------------------------------|
ADD HYD             NHYDsum=["ST2-IN"], NHYDs to
```

```
add=["DRAIN1"+"D1"+"A1-STR"+"A1-OVF"+"ST2STR"+"ST2OVF"+"O8PIPE"]
*%-----------------|-----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["A7"], DT=[1]min, AREA=[3.51](ha), XIMP=[0.68], TIMP=[0.85],
DWF=[0](cms), LOSS=[1]:
                    Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                    F=[0.00](mm),
                    Pervious   areas: IAper=[4.67](mm), SLPP=[0.5](%), LGP=[50](m),
                    MNP=[0.250], SCP=[0](min),
                    Impervious areas: IAimp=[1.57](mm), SLPI=[0.5](%),
                    LGI=[264.953](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                    END=-1
*%-----------------|-----------------------------------------------------------|
ROUTE RESERVOIR     NHYDout=["A7-STR"], NHYDin=["A7"], RDT=[1](min),
                         TABLE of ( OUTFLOW-STORAGE ) values
                                   (cms) - (ha-m)
                                 [ 0.000 , 0.000 ]
                                 [ 0.049 , 0.054 ]
                                 [ 0.102 , 0.072 ]
                                 [ 0.140 , 0.082 ]
                                 [ 0.175 , 0.099 ]
                                 [ 0.225 , 0.105 ]
                                 [ 0.260 , 0.114 ]
                                 [ -1 , -1 ] (max twenty pts)
                                 NHYDovf=["A7-OVF"]
*%-----------------|-----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["ST-3"], DT=[1]min, AREA=[0.71](ha), XIMP=[0.46],
TIMP=[0.57], DWF=[0](cms), LOSS=[1]:
                    Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                    F=[0.00](mm),
                    Pervious   areas: IAper=[4.67](mm), SLPP=[0.5](%), LGP=[50](m),
                    MNP=[0.250], SCP=[0](min),
                    Impervious areas: IAimp=[1.57](mm), SLPI=[0.5](%),
                    LGI=[119.164](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                    END=-1
*%-----------------|-----------------------------------------------------------|
ROUTE RESERVOIR     NHYDout=["ST3STR"], NHYDin=["ST-3"], RDT=[1](min),
                         TABLE of ( OUTFLOW-STORAGE ) values
                                   (cms) - (ha-m)
                                 [ 0.000 , 0.0000 ]
                                 [ 0.063 , 0.0010 ]
                                 [ 0.064 , 0.0094 ]
                                 [ -1 , -1 ] (max twenty pts)
                                 NHYDovf=["ST3OVF"]
*%-----------------|-----------------------------------------------------------|
*ANALYSIS POINT 2 - TOTAL FLOW AT OUTLET OF STREET 2/3 INTERSECTION
*%-----------------|-----------------------------------------------------------|
ADD HYD             NHYDsum=["PT2ST3"], NHYDs to
add=["ST2-IN"+"A7-STR"+"A7-OVF"+"ST3STR"+"ST3OVF"]
*%-----------------|-----------------------------------------------------------|
*ROUTE FLOW through O'Keefe Drain 2
ROUTE CHANNEL       NHYDout=["DRAIN2"], NHYDin=["PT2ST3"], RDT=[1](min),
                    CHLGTH=[592]{m), CHSLOPE=[.23](%), FPSLOPE=[.23](%),
                                        SECNUM=[1], NSEG=[3]
                    ( SEGROUGH, SEGDIST (m))=[0.07,12.60 -0.043,17.40 0.07,30.00] NSEG
                    times
                    ( DISTANCE (m), ELEVATION (m))=[0.00, 1.70]
                    (2.60, 0.95)
                    (12.60, 0.75)
                    (14.10, 0.00)
                    (15.90, 0.00)
                    (17.40, 0.75)
                    (27.40, 0.95)
```

```
                        (30.00, 1.70)
*%-----------------|-------------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["D2"], DT=[1]min, AREA=[2.28](ha), DWF=[0](cms), CN/C=[84],
IA=[9.0](mm),
                    N=[3], TP=[0.99]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-------------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["A17"], DT=[1]min, AREA=[12.04](ha), XIMP=[0.68],
TIMP=[0.85], DWF=[0](cms), LOSS=[1]:
                    Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                    F=[0.00](mm),
                    Pervious   areas: IAper=[4.67](mm), SLPP=[0.5](%), LGP=[50](m),
                    MNP=[0.250], SCP=[0](min),
                    Impervious areas: IAimp=[1.57](mm), SLPI=[0.5](%),
                    LGI=[490.714](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                    END=-1
*%-----------------|-------------------------------------------------------------|
ROUTE RESERVOIR     NHYDout=["A17STR"], NHYDin=["A17"], RDT=[1](min),
                         TABLE of ( OUTFLOW-STORAGE ) values
                                   (cms) - (ha-m)
                                 [ 0.000 , 0.000 ]
                                 [ 0.169 , 0.185 ]
                                 [ 0.349 , 0.248 ]
                                 [ 0.482 , 0.283 ]
                                 [ 0.602 , 0.338 ]
                                 [ 0.771 , 0.359 ]
                                 [ 0.891 , 0.391 ]
                                 [ -1 , -1 ] (max twenty pts)
                                 NHYDovf=["A17OVF"]
*%-----------------|-------------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["ST-4"], DT=[1]min, AREA=[0.35](ha), XIMP=[0.46],
TIMP=[0.57], DWF=[0](cms), LOSS=[1]:
                    Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                    F=[0.00](mm),
                    Pervious   areas: IAper=[4.67](mm), SLPP=[0.5](%), LGP=[50](m),
                    MNP=[0.250], SCP=[0](min),
                    Impervious areas: IAimp=[1.57](mm), SLPI=[0.5](%), LGI=[83.666](m),
                    MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                    END=-1
*%-----------------|-------------------------------------------------------------|
ROUTE RESERVOIR     NHYDout=["ST4STR"], NHYDin=["ST-4"], RDT=[1](min),
                         TABLE of ( OUTFLOW-STORAGE ) values
                                   (cms) - (ha-m)
                                 [ 0.000 , 0.0000 ]
                                 [ 0.031 , 0.0010 ]
                                 [ 0.032 , 0.0050 ]
                                 [ -1 , -1 ] (max twenty pts)
                                 NHYDovf=["ST4OVF"]
*%-----------------|-------------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["A18"], DT=[1]min, AREA=[5.30](ha), XIMP=[0.68], TIMP=[0.85],
DWF=[0](cms), LOSS=[1]:
                    Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                    F=[0.00](mm),
                    Pervious   areas: IAper=[4.67](mm), SLPP=[0.5](%), LGP=[50](m),
                    MNP=[0.250], SCP=[0](min),
```

```
                    Impervious areas: IAimp=[1.57](mm), SLPI=[0.5](%),
                    LGI=[325.576](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                    END=-1
*%-----------------|-------------------------------------------------------------|
ROUTE RESERVOIR     NHYDout=["A18STR"], NHYDin=["A18"], RDT=[1](min),
                         TABLE of ( OUTFLOW-STORAGE ) values
                                   (cms) - (ha-m)
                                 [ 0.000 , 0.000 ]
                                 [ 0.074 , 0.082 ]
                                 [ 0.154 , 0.109 ]
                                 [ 0.212 , 0.125 ]
                                 [ 0.265 , 0.149 ]
                                 [ 0.339 , 0.158 ]
                                 [ 0.392 , 0.172 ]
                                 [ -1 , -1 ] (max twenty pts)
                                 NHYDovf=["A18OVF"]
*%-----------------|-------------------------------------------------------------|
*ANALYSIS POINT 3 - TOTAL FLOW AT OUTLET OF STREET 4
*%-----------------|-------------------------------------------------------------|
ADD HYD             NHYDsum=["PT3ST4"], NHYDs to
add=["DRAIN2"+"D2"+"A17STR"+"A17OVF"+"ST4STR"+"ST4OVF"+"A18STR"+"A18OVF"]
*%-----------------|-------------------------------------------------------------|
*ROUTE FLOW through O'Keefe Drain 3
ROUTE CHANNEL       NHYDout=["DRAIN3"], NHYDin=["PT3ST4"], RDT=[1](min),
                    CHLGTH=[525]{m), CHSLOPE=[.23](%), FPSLOPE=[.23](%),
                    SECNUM=[1], NSEG=[3]
                    ( SEGROUGH, SEGDIST (m))=[0.07,12.50 -0.043,17.50 0.07,30.00] NSEG
                    times
                    ( DISTANCE (m), ELEVATION (m))=[0.00, 1.70]
                    (2.50, 1.00)
                    (12.50, 0.80)
                    (14.10, 0.00)
                    (15.90, 0.00)
                    (17.50, 0.80)
                    (27.50, 1.00)
                    (30.00, 1.70)
*%-----------------|-------------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["D3"], DT=[1]min, AREA=[2.51](ha),
                    DWF=[0](cms), CN/C=[86], IA=[8.7](mm), N=[3], TP=[0.73]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-------------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["C1"], DT=[1]min, AREA=[3.41](ha), XIMP=[0.68], TIMP=[0.85],
DWF=[0](cms), LOSS=[1]:
                    Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                    F=[0.00](mm),
                    Pervious   areas: IAper=[4.67](mm), SLPP=[0.5](%), LGP=[50](m),
                    MNP=[0.250], SCP=[0](min),
                    Impervious areas: IAimp=[1.57](mm), SLPI=[0.5](%),
                    LGI=[261.151](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                    END=-1
*%-----------------|-------------------------------------------------------------|
ROUTE RESERVOIR     NHYDout=["C1-STR"], NHYDin=["C1"], RDT=[1](min),
                         TABLE of ( OUTFLOW-STORAGE ) values
                                   (cms) - (ha-m)
                                 [ 0.000 , 0.000 ]
```

```
                                    [ 0.048 , 0.052 ]
                                    [ 0.099 , 0.070 ]
                                    [ 0.136 , 0.080 ]
                                    [ 0.170 , 0.096 ]
                                    [ 0.218 , 0.102 ]
                                    [ 0.252 , 0.111 ]
                                    [ -1 , -1 ] (max twenty pts)
                                    NHYDovf=["C1-OVF"]
*%-------------------|-------------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["ST-5"], DT=[1]min, AREA=[0.45](ha), XIMP=[0.46],
TIMP=[0.57], DWF=[0](cms), LOSS=[1]:
                    Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                    F=[0.00](mm),
                    Pervious   areas: IAper=[4.67](mm), SLPP=[0.5](%), LGP=[50](m),
                    MNP=[0.250], SCP=[0](min),
                    Impervious areas: IAimp=[1.57](mm), SLPI=[0.5](%), LGI=[94.868](m),
                    MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                    END=-1
*%-------------------|-------------------------------------------------------------|
ROUTE RESERVOIR     NHYDout=["ST5STR"], NHYDin=["ST-5"], RDT=[1](min),
                         TABLE of ( OUTFLOW-STORAGE ) values
                                   (cms) - (ha-m)
                                 [ 0.000 , 0.0000 ]
                                 [ 0.040 , 0.0010 ]
                                 [ 0.041 , 0.0062 ]
                                 [ -1 , -1 ] (max twenty pts)
                                 NHYDovf=["ST5OVF"]
*%-------------------|-------------------------------------------------------------|
ADD HYD             NHYDsum=["ST5-E"], NHYDs to
add=["DRAIN3"+"D3"+"C1-STR"+"C1-OVF"+"ST5STR"+"ST5OVF"]
*%-------------------|-------------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["STRAND"], DT=[1](min), AREA=[7.59](ha),
                    XIMP=[0.64], TIMP=[0.85], DWF=[0](cms), LOSS=[1]:
                    Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                    F=[0.00](mm),
                    Pervious   areas: IAper=[4.67](mm), SLPP=[0.5](%), LGP=[40](m),
                    MNP=[0.250], SCP=[0](min),
                    Impervious areas: IAimp=[1.57](mm), SLPI=[0.5](%), LGI=[1230](m),
                    MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                    END=-1
*%-------------------|-------------------------------------------------------------|
ROUTE RESERVOIR     NHYDout=["S-POND"], NHYDin=["STRAND"], RDT=[1](min),
                         TABLE of ( OUTFLOW-STORAGE ) values
                                   (cms) - (ha-m)
                                 [ 0.000 , 0.000 ]
                                 [ 0.033 , 0.188 ]
                                 [ 0.057 , 0.253 ]
                                 [ 0.104 , 0.287 ]
                                 [ 0.160 , 0.336 ]
                                 [ 0.340 , 0.346 ]
                                 [ 0.471 , 0.360 ]
                                 [ 0.824 , 0.390 ]
                                 [ -1 , -1 ] (max twenty pts)
                                 NHYDovf=["S-OVF"]
*%-------------------|-------------------------------------------------------------|
ADD HYD             NHYDsum=["SSAOUT"], NHYDs to add=["ST5-E"+"S-POND"+"S-OVF"]
*%-------------------|-------------------------------------------------------------|
SAVE HYD            NHYD=["SSAOUT"], # OF PCYCLES=[5], ICASEsh=[1]
                    HYD_COMMENT=["SSAOUT"]
*%-------------------|-------------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["Area-A"], DT=[1]min, AREA=[66.75](ha), XIMP=[0.64],
TIMP=[0.80], DWF=[0](cms), LOSS=[1]:
```

```
                        Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                        F=[0.00](mm),
                        Pervious   areas: IAper=[4.67](mm), SLPP=[0.5](%), LGP=[50](m),
                        MNP=[0.250], SCP=[0](min),
                        Impervious areas: IAimp=[1.57](mm), SLPI=[0.5](%),
                        LGI=[1155.422](m), MNI=[0.013], SCI=[0](min),
                        Continuous simulation parameters:
                        IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                        END=-1
*%-----------------|-------------------------------------------------------------|
SAVE HYD                NHYD=["Area-A"], # OF PCYCLES=[1], ICASEsh=[1]
                        HYD_COMMENT=["SMWF-A Inflow"]
*%-----------------|-------------------------------------------------------------|
ROUTE RESERVOIR         NHYDout=["SWMF-A"], NHYDin=["Area-A"], RDT=[1](min),
                             TABLE of ( OUTFLOW-STORAGE ) values
                                       (cms) - (ha-m)
                                     [ 0.000 , 0.000 ]
                                     [ 0.103 , 1.077 ]
                                     [ 0.128 , 1.749 ]
                                     [ 0.382 , 2.282 ]
                                     [ 0.703 , 2.582 ]
                                     [ 1.256 , 2.978 ]
                                     [ 1.567 , 3.202 ]
                                     [ 1.955 , 3.493 ]
                                     [ 2.100 , 3.600 ]
                                     [ -1 , -1 ] (max twenty pts)
                                     NHYDovf=["SWMAOV"]
*%-----------------|-------------------------------------------------------------|
SAVE HYD                NHYD=["SWMF-A"], # OF PCYCLES=[1], ICASEsh=[1]
                        HYD_COMMENT=["SMWF-A Outflow"]
*%-----------------|-------------------------------------------------------------|
*ANALYSIS POINT 4 - TOTAL FLOW AT OUTLET OF STREET 5
*%-----------------|-------------------------------------------------------------|
ADD HYD                 NHYDsum=["PT4ST5"], NHYDs to add=["SSAOUT"+"SWMF-A"+"SWMAOV"]
*%-----------------|-------------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["C6"], DT=[1]min, AREA=[1.87](ha), XIMP=[0.68], TIMP=[0.85],
DWF=[0](cms), LOSS=[1]:
                        Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                        F=[0.00](mm),
                        Pervious   areas: IAper=[4.67](mm), SLPP=[0.5](%), LGP=[50](m),
                        MNP=[0.250], SCP=[0](min),
                        Impervious areas: IAimp=[1.57](mm), SLPI=[0.5](%),
                        LGI=[193.391](m), MNI=[0.013], SCI=[0](min),
                        Continuous simulation parameters:
                        IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                        END=-1
*%-----------------|-------------------------------------------------------------|
ROUTE RESERVOIR         NHYDout=["C6-STR"], NHYDin=["C6"], RDT=[1](min),
                             TABLE of ( OUTFLOW-STORAGE ) values
                                       (cms) - (ha-m)
                                     [ 0.000 , 0.000 ]
                                     [ 0.026 , 0.029 ]
                                     [ 0.054 , 0.038 ]
                                     [ 0.075 , 0.044 ]
                                     [ 0.093 , 0.052 ]
                                     [ 0.120 , 0.056 ]
                                     [ 0.138 , 0.061 ]
                                     [ -1 , -1 ] (max twenty pts)
                                     NHYDovf=["C6-OVF"]
*%-----------------|-------------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["C7"], DT=[1]min, AREA=[1.62](ha), XIMP=[0.68], TIMP=[0.85],
DWF=[0](cms), LOSS=[1]:
                        Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                        F=[0.00](mm),
                        Pervious   areas: IAper=[4.67](mm), SLPP=[0.5](%), LGP=[50](m),
                        MNP=[0.250], SCP=[0](min),
```

```
                         Impervious areas: IAimp=[1.57](mm), SLPI=[0.5](%),
                         LGI=[180.000](m), MNI=[0.013], SCI=[0](min),
                         Continuous simulation parameters:
                         IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                         END=-1
*%-----------------|-------------------------------------------------------------|
ROUTE RESERVOIR          NHYDout=["C7-STR"], NHYDin=["C7"], RDT=[1](min),
                              TABLE of ( OUTFLOW-STORAGE ) values
                                        (cms) - (ha-m)
                                      [ 0.000 , 0.000 ]
                                      [ 0.023 , 0.025 ]
                                      [ 0.047 , 0.033 ]
                                      [ 0.065 , 0.038 ]
                                      [ 0.081 , 0.045 ]
                                      [ 0.104 , 0.048 ]
                                      [ 0.120 , 0.053 ]
                                      [ -1 , -1 ] (max twenty pts)
                                      NHYDovf=["C7-OVF"]
*%-----------------|-------------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["ST-6"], DT=[1]min, AREA=[0.41](ha),XIMP=[0.46], TIMP=[0.57],
DWF=[0](cms), LOSS=[1]:
                         Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                         F=[0.00](mm),
                         Pervious   areas: IAper=[4.67](mm), SLPP=[0.5](%), LGP=[50](m),
                         MNP=[0.250], SCP=[0](min),
                         Impervious areas: IAimp=[1.57](mm), SLPI=[0.5](%), LGI=[90.554](m),
                         MNI=[0.013], SCI=[0](min),
                         Continuous simulation parameters:
                         IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                         END=-1
*%-----------------|-------------------------------------------------------------|
ROUTE RESERVOIR          NHYDout=["ST6STR"], NHYDin=["ST-6"], RDT=[1](min),
                              TABLE of ( OUTFLOW-STORAGE ) values
                                        (cms) - (ha-m)
                                      [ 0.000 , 0.0000 ]
                                      [ 0.036 , 0.0010 ]
                                      [ 0.037 , 0.0058 ]
                                      [ -1 , -1 ] (max twenty pts)
                                      NHYDovf=["ST6OVF"]
*%-----------------|-------------------------------------------------------------|
*ANALYSIS POINT 5 - TOTAL FLOW AT OUTLET OF STREET 6
*%-----------------|-------------------------------------------------------------|
ADD HYD                  NHYDsum=["PT5ST6"], NHYDs to
add=["PT4ST5"+"C6-STR"+"C6-OVF"+"C7-STR"+"C7-OVF"+"ST6STR"+"ST6OVF"]
*%-----------------|-------------------------------------------------------------|
*ROUTE FLOW through O'Keefe Drain 4
ROUTE CHANNEL            NHYDout=["DRAIN4"], NHYDin=["PT5ST6"], RDT=[1](min),
                         CHLGTH=[324]{m), CHSLOPE=[.10](%), FPSLOPE=[.10](%),
                         SECNUM=[1], NSEG=[3]
                         ( SEGROUGH, SEGDIST (m))=[0.07,12.00 -0.043,18.00 0.07,30.00] NSEG
                         times
                         ( DISTANCE (m), ELEVATION (m))=[0.00, 2.00]
                         (2.00, 1.20)
                         (12.00, 1.00)
                         (14.00, 0.00)
                         (16.00, 0.00)
                         (18.00, 1.00)
                         (28.00, 1.20)
                         (30.00, 2.00)
*%-----------------|-------------------------------------------------------------|
CONTINUOUS NASHYD        NHYD=["D4"], DT=[1]min, AREA=[1.73](ha), DWF=[0](cms), CN/C=[88],
IA=[8.4](mm),
                         N=[3], TP=[0.60]hrs,
                         Continuous simulation parameters:
                         IaRECper=[4](hrs),
                         SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
```

```
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["Area-B"], DT=[1]min, AREA=[24.04](ha), XIMP=[0.62],
TIMP=[0.77], DWF=[0](cms), LOSS=[1]:
                    Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                    F=[0.00](mm),
                    Pervious   areas: IAper=[4.67](mm), SLPP=[1.4](%), LGP=[50](m),
                    MNP=[0.250], SCP=[0](min),
                    Impervious areas: IAimp=[1.57](mm), SLPI=[1.4](%),
                    LGI=[693.397](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                    END=-1
*%-----------------|-----------------------------------------------------------|
ROUTE RESERVOIR     NHYDout=["SWMF-B"], NHYDin=["Area-B"], RDT=[1](min),
                         TABLE of ( OUTFLOW-STORAGE ) values
                                   (cms) - (ha-m)
                                 [ 0.000 , 0.000 ]
                                 [ 0.025 , 0.090 ]
                                 [ 0.175 , 0.510 ]
                                 [ 0.350 , 0.710 ]
                                 [ 0.495 , 0.820 ]
                                 [ 0.648 , 0.980 ]
                                 [ 0.965 , 1.045 ]
                                 [ 1.072 , 1.140 ]
                                 [ -1 , -1 ] (max twenty pts)
                                 NHYDovf=["SWMBOVF"]
*%-----------------|-----------------------------------------------------------|
ADD HYD             NHYDsum=["D4-EX"], NHYDs to add=["DRAIN4"+"D4"+"SWMF-B"+"SWMBOVF"]
*%-----------------|-----------------------------------------------------------|
*ROUTE FLOW THROUGH O'Keefe Drain 5
* JFSA: Nov. 2020, added en points to close X-Section
ROUTE CHANNEL       NHYDout=["DRAIN5"], NHYDin=["D4-EX"], RDT=[1](min),
                    CHLGTH=[413.0](m), CHSLOPE=[0.16](%), FPSLOPE=[0.16](%),
                    SECNUM=[1], NSEG=[3]
                    ( SEGROUGH, SEGDIST (m))=[0.043,12.29 -0.033,17.97
                    0.043,32.84] NSEG times
                    ( DISTANCE (m), ELEVATION (m))=(-0.01, 2.50)
                    [0.00, 1.41]
                    [6.13, 0.97]
                    [12.29, 0.89]
                    [15.71, 0.00]
                    [17.97, 0.39]
                    [23.04, 0.35]
                    [32.83, 0.96]
                    (32.84, 2.50)
*%-----------------|-----------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["D5"], DT=[1]min, AREA=[1.90](ha),
                    DWF=[0](cms), CN/C=[86], IA=[8.7](mm), N=[3], TP=[0.69]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
*EXTERNAL FLOWS SOUTHEAST OF THE SITE NORTH OF McKENNA CASEY DR.
CONTINUOUS NASHYD   NHYD=["O-13SDF"], DT=[1]min, AREA=[9.74](ha),
                    DWF=[0](cms), CN/C=[81], IA=[4.0](mm), N=[3], TP=[.43]hrs,
                    Continuous simulation parameters:
```

```
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
*SNOW DISPOSAL FACILITY
*PARAMETERS BASED ON ROBINSON 2006 MODEL
ROUTE RESERVOIR     NHYDout=["SDF"], NHYDin=["O-13SDF"], RDT=[1](min),
                         TABLE of ( OUTFLOW-STORAGE ) values
                                   (cms) - (ha-m)
                                 [0.000,0.000]
                                 [0.150,0.600]
                                 (0.200,1.500)
                                 [ -1 , -1 ] (max twenty pts)
                                 NHYDovf=["OVFSDF"]
*%-----------------|-----------------------------------------------------------|
*ANALYSIS POINT 6 - McKenna Casey Dr.
*%-----------------|-----------------------------------------------------------|
ADD HYD             NHYDsum=["PT6MC"], NHYDs to add=["DRAIN5"+"D5"+"SDF"]
*%-----------------|-----------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["O-15"], DT=[1]min, AREA=[10.67](ha),
                    DWF=[0](cms), CN/C=[82], IA=[7.5](mm), N=[3], TP=[0.30]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
*TOTAL FLOW NORTH OF McKENNA CASEY DR.
ADD HYD             NHYDsum=["M-C"], NHYDs to add=["PT6MC"+"O-15"]
*%-----------------|-----------------------------------------------------------|
*ROUTE FLOW THROUGH AREA O-14
* JFSA: Nov. 2020, added end points to close X-section
ROUTE CHANNEL       NHYDout=["O-14Ch"], NHYDin=["M-C"], RDT=[1](min),
                    CHLGTH=[845.3](m), CHSLOPE=[0.10](%), FPSLOPE=[0.10](%),
                    SECNUM=[1], NSEG=[3]
                    ( SEGROUGH, SEGDIST (m))=[0.06,15.00 -0.033,18.04 0.06,31.85] NSEG
                    times
                    ( DISTANCE (m), ELEVATION (m))=[-0.01, 2.5
                    (0.00, 1.53]
                    (5.56, 1.47)
                    (9.21, 1.45)
                    (12.45, 1.53)
                    (13.70, 1.50)
                    (15.00, 0.69)
                    (15.34, 0.00)
                    (16.51, 0.05)
                    (17.30, 0.17)
                    (18.04, 0.74)
                    (19.29, 1.32)
                    (22.73, 1.47)
                    (31.84, 1.41)
                    (31.85, 2.50)
*%-----------------|-----------------------------------------------------------|
*%    -Change O-14 from NASHYD to STANDHYD, name it "S-1-Okeefe" and add it to S-1
subcatchment based on Project 1474-BCDC, JFSA, Nov. 2020
*%    -JFSA 2021-02-16, add detailed subcatchment drainage area for each subcatchment
in Corrigan sub-catchment. After adding part of  O-14 to S_1 sub-catchment so O-14
becomes 5 ha instead of 30.02 ha and TP becomes 0.133 (5*0.8/30.02) instead of 0.8
CONTINUOUS NASHYD   NHYD=["O-14"], DT=[1]min, AREA=[5](ha),
```

```
                    DWF=[0](cms), CN/C=[82], IA=[7.5](mm), N=[3], TP=[0.133]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*
*%-----------------|-----------------------------------------------------------|
*ANALYSIS POINT 7 - JOCK RIVER
* 2020-12-01 To Foster Drain
* 2020-12-01  replace ("PT7JR") by ("OKEEFE")
*%-----------------|-----------------------------------------------------------|
ADD HYD             NHYDsum=["OKEEFE"], NHYDs to add=["O-14Ch"+"O-14"]
*%-----------------|-----------------------------------------------------------|
*CONTINUOUS STANDHYD NHYD=["OKEEFE"], DT=[1](min), AREA=[448](ha),
*                    XIMP=[0.65], TIMP=[0.65], DWF=[0](cms), LOSS=[2],
*                    SCS curve number CN=[77],
*                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[0.5](%),
*                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
*                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[0.5](%),
*                            LGI=[1728](m), MNI=[0.013], SCI=[0](min),
*                    Continuous simulation parameters:
*                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
*                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                    InterEventTime=[18](hrs),   END=-1
*#****************************************************************************
*#    Okeefe Pond
*#    - Rating curve obtained assuming 40m3/ha in 24 hours for quality control
*#      and a ratio of the catchment area to the West Clarke pond rating curve
*#      from the MSS for the next coordinates
*#****************************************************************************
*ROUTE RESERVOIR     NHYDout=["P_OKE"], NHYDin=["OKEEFE"],
*                    RDT=[1](min),
*                         TABLE of ( OUTFLOW-STORAGE ) values
*                                   (cms) - (ha-m)
*                                 [   0.0  ,  0.0]
*                                 [  14.13 , 13.0]
*                                 [   -1  ,  -1  ]  (maximum one hundred pairs of points)
*                                 NHYDovf=["ok-OVF"],
*%-----------------|-----------------------------------------------------------------------------------------------|
*   -JFSA 2021-02-25  "S-1-D2" and "S-1-D3" are part of S-1 sub-catchment. They are moved to drain before station 6215 on Jock River
*CONTINUOUS STANDHYD NHYD=["S-1-D2"], DT=[1](min), AREA=[18.67](ha), XIMP=[0.65], TIMP=[0.65], DWF=[0](cms),
*                    LOSS=[2], SCS curve number CN=[75], Pervious surfaces: IAper=[4.67](mm), SLPP=[2.0](%),
*                    LGP=[40](m), MNP=[0.25], SCP=[0](min), Impervious surfaces: IAimp=[1.57](mm), SLPI=[0.75](%),
*                    LGI=[352.798](m), MNI=[0.013], SCI=[0](min),

*                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
*                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                    InterEventTime=[12](hrs),   END=-1
*%-----------------|-----------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["S-1-D2"], DT=[1]min, AREA=[18.67](ha),
                    DWF=[0](cms), CN/C=[77],  IA=[4.67](mm),
                    N=[3], TP=[1.120]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
```

```
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
*COMPUTE DUALHYD     NHYDin=["S-1-D2"], CINLET=[2.062](cms), NINLET=[1],
*                    MajNHYD=["S-1-D2J"]
*                    MinNHYD=["S-1-D2N"]
*                    TMJSTO=[9999999](cu-m)
*%-----------------|-----------------------------------------------------------|
*ADD HYD             NHYDsum=["S-1-D2S"], NHYDs to add=["S-1-D2J"+"S-1-D2N"]
*%-----------------|-----------------------------------------------------------|
*ROUTE RESERVOIR     NHYDout=["S-1-D2R"] ,NHYDin=["S-1-D2S"] ,
*                    RDT=[1](min),
*                          TABLE of ( OUTFLOW-STORAGE ) values
*                                      (cms) - (ha-m)
*                                    [ 0.0     , 0.0 ]
*                                    [ 0.2231, 0.7445 ]
*                                    [    -1  ,  -1    ]  (max twenty pts)
*                          NHYDovf=["S-1-D2Rovf"]
*%-----------------|-----------------------------------------------------------|
*CONTINUOUS STANDHYD NHYD=["S-1-D3"], DT=[1](min), AREA=[6.79](ha), XIMP=[0.65],
TIMP=[0.65], DWF=[0](cms),
*                    LOSS=[2], SCS curve number CN=[75], Pervious surfaces:
IAper=[4.67](mm), SLPP=[2.0](%),
*                    LGP=[40](m), MNP=[0.25], SCP=[0](min), Impervious surfaces:
IAimp=[1.57](mm), SLPI=[0.75](%),
*                    LGI=[212.760](m), MNI=[0.013], SCI=[0](min),
*                    Continuous simulation parameters:
*                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
*                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                    InterEventTime=[12](hrs),   END=-1
*%-----------------|-----------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["S-1-D3"], DT=[1]min, AREA=[6.79](ha),
                    DWF=[0](cms), CN/C=[77],  IA=[4.67](mm),
                    N=[3], TP=[1.281]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
*COMPUTE DUALHYD     NHYDin=["S-1-D3"], CINLET=[0.719](cms), NINLET=[1],
*                    MajNHYD=["S-1-D3J"]
*                    MinNHYD=["S-1-D3N"]
*                    TMJSTO=[9999999](cu-m)
*%-----------------|-----------------------------------------------------------|
*ADD HYD             NHYDsum=["S-1-D3S"], NHYDs to add=["S-1-D3J"+"S-1-D3N"]
*%-----------------|-----------------------------------------------------------|
*ROUTE RESERVOIR     NHYDout=["S-1-D3R"] ,NHYDin=["S-1-D3S"] ,
*                    RDT=[1](min),
*                          TABLE of ( OUTFLOW-STORAGE ) values
*                                      (cms) - (ha-m)
*                                    [ 0.0     , 0.0 ]
*                                    [ 0.0811, 0.2708 ]
*                                    [    -1  ,  -1    ]  (max twenty pts)
*                          NHYDovf=["S-1-D3Rovf"]
*%-----------------|-----------------------------------------------------------|
ADD HYD             NHYDsum=["SN_OK"], NHYDs to add=["N_OK"+"OKEEFE"+"S-1-D2"+"S-1-D3"]
*%-----------------|-----------------------------------------------------------|
SAVE HYD            NHYD=["SN_OK"],   # OF PCYCLES=[-1],  ICASEsh=[1]
                    HYD_COMMENT=["Total Flows at Okeefe Drain"]
*%-----------------|-----------------------------------------------------------|
*#
```

```
*# Hydrograph from Node Okeefe routed to Node at Foster Drain
*# Channel X-Section obtained from RVCA Hydraulic Model - Station 6215
*#
ROUTE CHANNEL         NHYDout=["N_FO"] ,NHYDin=["SN_OK"] ,
                      RDT=[1](min),
                      CHLGTH=[1183](m),  CHSLOPE=[0.0761](%),
                                          FPSLOPE=[0.0761](%),
                      SECNUM=[1.0],       NSEG=[3]
                      ( SEGROUGH, SEGDIST (m))=
                        [0.050,-33.89
                        -0.035,31.59
                        0.050,34.41] NSEG times
                      ( DISTANCE (m), ELEVATION (m))=
                      [-794.18, 91.00]
                      [-775.41, 91.50]
                      [-702.63, 91.50]
                      [-546.19, 91.50]
                      [-529.54, 91.50]
                      [-323.44, 91.00]
                      [-320.71, 91.00]
                      [-183.59, 91.00]
                      [-182.54, 90.50]
                      [-181.36, 90.00]
                      [-177.37, 90.00]
                      [-87.70, 90.00]
                      [-33.89, 90.00]
                      [-18.52, 86.88]
                      [0.00,85.20]
                      [16.20, 86.83]
                      [31.59, 90.00]
                      [33.03, 90.50]
                      [34.41, 91.00]
*%-----------------|-----------------------------------------------------------|
*#******************************************************************************
*#    Catchment FOSTER
*#    - To Foster ditch (north of the Jock)
*#    - Partially developed (medium density); remaining agricultural
*#    - 2020-12-01 JFSA Foster area is 332 as per Foster SWMF Environmental Study Report, CH2MHILL, Aug 2013.
*#    - 2020-12-01 decrease Foster drainage area from (373 HA) to (307.98 HA) after increasing Okeefe drainage area to (513.02 HA) so the total drainage area remains the same
*#    - 2021-02-12  update Foster area to 325.44 ha as measured from QGIS
*#******************************************************************************
CONTINUOUS STANDHYD NHYD=["FOSTER"], DT=[1]min, AREA=[325.44](ha),
                      XIMP=[0.55], TIMP=[0.55], DWF=[0](cms), LOSS=[2],
                      SCS curve number CN=[74],
                      Pervious   surfaces: IAper=[4.67](mm), SLPP=[0.5](%),
                              LGP=[40](m), MNP=[0.25], SCP=[0](min),
                      Impervious surfaces: IAimp=[1.57](mm), SLPI=[0.5](%),
                              LGI=[1472.956](m), MNI=[0.013], SCI=[0](min),
                      Continuous simulation parameters:
                      IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                      SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                      InterEventTime=[18](hrs),   END=-1
*#******************************************************************************
*#    Foster Pond
*#    - Rating curve obtained assuming 40m3/ha in 24 hours for quality control
*#      and a ratio of the catchment area to the West Clarke pond rating curve
*#      from the MSS for the next coordinates
*#******************************************************************************
ROUTE RESERVOIR       NHYDout=["P_FOS"],  NHYDin=["FOSTER"],
                      RDT=[1](min),
                            TABLE of ( OUTFLOW-STORAGE ) values
                                        (cms) - (ha-m)
                                      [   0.0 ,  0.0 ]
```

```
                                    [   10.34 , 10]
                                    [   -1  ,  -1  ]  (max twenty pts)
                          NHYDovf=["FO-OVF"]
*%-----------------|-----------------------------------------------------------|
ADD HYD             NHYDsum=["FOSTER-OUT"], NHYDs to add=["P_FOS"+"FO-OVF"]
*%-----------------|-----------------------------------------------------------|
*#******************************************************************************
*    -Brazeau area from P 1800-19 =[71.751], change to 63.59 ha based on GIS measurements
*     -JFSA, 2021-01-19  update "W_CLAR_BRAZ" to 73.29 ha based on GIS measurements
*     -JFSA, 2021-01-22  Brazeau ("MS_P10"+"P10-OVF")brazeau pond discharges directly
to the jock river through a road side ditch on the west side of Borrisokane road
(station 6016)
CONTINUOUS STANDHYD NHYD=["W_CLAR_BRAZ"], DT=[1]min, AREA=[73.29](ha),
                    XIMP=[0.6], TIMP=[0.65], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[77],
                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[0.5](%),
                            LGI=[699.00](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[18](hrs),   END=-1
*%-----------------|-----------------------------------------------------------|
* 2020-12-01 correct pond curve values
ROUTE RESERVOIR     NHYDout=["MS_P10"],  NHYDin=["W_CLAR_BRAZ"],
                    RDT=[1](min),
                          TABLE of ( OUTFLOW-STORAGE ) values
                                      (cms) - (ha-m)
                                    [   0.0 ,  0.0 ]
                                    [ 0.068 , 0.001 ]
                                    [ 0.271 , 0.022 ]
                                    [ 0.379 , 0.051 ]
                                    [ 0.48 , 0.091 ]
                                    [ 0.853 , 0.341 ]
                                    [ 1.005 , 0.61 ]
                                    [ 1.128 , 1.231 ]
                                    [ 1.155 , 1.592 ]
                                    [ 1.194 , 1.876 ]
                                    [ 1.2 , 1.921 ]
                                    [ 1.259 , 2.369 ]
                                    [ 1.3 , 2.665 ]
                                    [ 1.349 , 2.813 ]
                                    [   -1  ,  -1  ]  (max twenty pts)
                          NHYDovf=["P10-OVF"]
*%-----------------|-----------------------------------------------------------|
*   -JFSA 2021-02-26  "S-1-FO-D2" is a part of S-1 sub-catchment. It is moved to drain
before station 980 on Foster Drain
*CONTINUOUS STANDHYD NHYD=["S-1-FO-D2"], DT=[1]min, AREA=[4.94](ha),
*                    XIMP=[0.55], TIMP=[0.55], DWF=[0](cms), LOSS=[2],
*                    SCS curve number CN=[74],
*                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[0.5](%),
*                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
*                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[0.5](%),
*                            LGI=[181.475](m), MNI=[0.013], SCI=[0](min),
*                    Continuous simulation parameters:
*                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
*                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                    InterEventTime=[18](hrs),   END=-1
*%-----------------|-----------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["S-1-FO-D2"], DT=[1]min, AREA=[4.94](ha),
                    DWF=[0](cms), CN/C=[77],  IA=[4.67](mm),
                    N=[3], TP=[1.10]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
```

```
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
*COMPUTE DUALHYD     NHYDin=["S-1-FO-D2"], CINLET=[0.508](cms), NINLET=[1],
*                    MajNHYD=["S-1-FO-D2J"]
*                    MinNHYD=["S-1-FO-D2N"]
*                    TMJSTO=[9999999](cu-m)
*%-----------------|-----------------------------------------------------------|
*ADD HYD             NHYDsum=["S-1-FO-D2S"], NHYDs to add=["S-1-FO-D2J"+"S-1-FO-D2N"]
*%-----------------|-----------------------------------------------------------|
*ROUTE RESERVOIR     NHYDout=["S-1-FO-D2R"] ,NHYDin=["S-1-FO-D2S"] ,
*                    RDT=[1](min),
*                          TABLE of ( OUTFLOW-STORAGE ) values

*                                    [ 0.0     , 0.0 ]
*                                    [ 0.0590, 0.1970 ]
*                                    [    -1  ,  -1    ]  (max twenty pts)
*                          NHYDovf=["S-1FOD2ovf"]
*%-----------------|-----------------------------------------------------------|
ADD HYD             NHYDsum=["980"], NHYDs to add=["FOSTER-OUT"+"S-1-FO-D2"]
*%-----------------|-----------------------------------------------------------|
SAVE HYD            NHYD=["980"],   # OF PCYCLES=[-1],  ICASEsh=[1]
                    HYD_COMMENT=["Total Flows at Station 980 on Foster Drain"]
*%-----------------|-----------------------------------------------------------|
*#
*# Hydrograph from Node Foster SWM (Station 980)to Node at station 520
*# Channel X-Section obtained from RVCA Hydraulic Model - Station 980
*#
ROUTE CHANNEL       NHYDout=["980-out"] ,NHYDin=["980"] ,
                    RDT=[1](min),
                    CHLGTH=[460](m),  CHSLOPE=[0.04348](%),
                                        FPSLOPE=[0.04348](%),
                    SECNUM=[1.0],       NSEG=[3]
                    ( SEGROUGH, SEGDIST (m))=
                      [0.050,45.90
                      -0.035,53.30
                      0.050,100] NSEG times
                    ( DISTANCE (m), ELEVATION (m))=
                    [0, 91.75 ]
                    [42.4, 92.18 ]
                    [43.5, 92.16 ]
                    [44.1, 92.1 ]
                    [44.6, 92 ]
                    [44.8, 91.86 ]
                    [45.9, 91.04 ]
                    [46.4, 90.65 ]
                    [46.8, 90.36 ]
                    [47.9, 90.32 ]
                    [48.7, 90.35 ]
                    [50.7, 90.33 ]
                    [52.2, 90.38 ]
                    [52.5, 90.59 ]
                    [53.3, 91.28 ]
                    [54, 91.83 ]
                    [54.3, 92 ]
                    [54.8, 92.08 ]
                    [55.4, 92.12 ]
                    [100, 91.84 ]
*%-----------------|-----------------------------------------------------------|
*   -JFSA 2021-02-26  "S-1-FO-D1" is a part of S-1 sub-catchment. It is moved to drain before station 520 on Foster Drain
*CONTINUOUS STANDHYD NHYD=["S-1-FO-D1"], DT=[1]min, AREA=[5.11](ha),
*                    XIMP=[0.65], TIMP=[0.65], DWF=[0](cms), LOSS=[2],
```

```
*                    SCS curve number CN=[74],
*                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[0.5](%),
*                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
*                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[0.5](%),
*                            LGI=[184.572](m), MNI=[0.013], SCI=[0](min),
*                    Continuous simulation parameters:
*                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
*                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                    InterEventTime=[18](hrs),   END=-1
*%-----------------|-------------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["S-1-FO-D1"], DT=[1]min, AREA=[5.11](ha),
                    DWF=[0](cms), CN/C=[77],  IA=[4.67](mm),
                    N=[3], TP=[1.10]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-------------------------------------------------------------|
*COMPUTE DUALHYD     NHYDin=["S-1-FO-D1"], CINLET=[0.605](cms), NINLET=[1],
*                    MajNHYD=["S-1-FO-D1J"]
*                    MinNHYD=["S-1-FO-D1N"]
*                    TMJSTO=[9999999](cu-m)
*%-----------------|-------------------------------------------------------------|
*ADD HYD             NHYDsum=["S-1-FO-D1S"], NHYDs to add=["S-1-FO-D1N"+"S-1-FO-D1J"]
*%-----------------|-------------------------------------------------------------|
*ROUTE RESERVOIR     NHYDout=["S-1-FO-D1R"] ,NHYDin=["S-1-FO-D1S"] ,
*                    RDT=[1](min),
*                          TABLE of ( OUTFLOW-STORAGE ) values
*                                      (cms) - (ha-m)
*                                    [ 0.0     , 0.0 ]
*                                    [ 0.0611, 0.2038 ]
*                                    [    -1  ,  -1    ]  (max twenty pts)
*                          NHYDovf=["S-1FOD1ovf"]
*%-----------------|-------------------------------------------------------------|
ADD HYD             NHYDsum=["520"], NHYDs to add=["980-out"+"S-1-FO-D1"]
*%-----------------|-------------------------------------------------------------|
SAVE HYD            NHYD=["520"],   # OF PCYCLES=[-1],  ICASEsh=[1]
                    HYD_COMMENT=["Total Flows at Sation 520 on Foster Drain"]
*%-----------------|-------------------------------------------------------------|
*# Hydrograph from Node at Station 520 (Foster Drain) to Node at station 6016 (Jock River)
*# Channel X-Section obtained from RVCA Hydraulic Model - Station 520
*#
ROUTE CHANNEL       NHYDout=["520-out"] ,NHYDin=["520"] ,
                    RDT=[1](min),
                    CHLGTH=[860](m),  CHSLOPE=[0.5872](%),
                                        FPSLOPE=[0.5872](%),
                    SECNUM=[1.0],       NSEG=[3]
                    ( SEGROUGH, SEGDIST (m))=
                      [0.050,45.90
                      -0.035,54.3
                      0.050,100.1097] NSEG times
                    ( DISTANCE (m), ELEVATION (m))=
                    [0, 91.26 ]
                    [44.9, 91.46 ]
                    [45.1, 91.37 ]
                    [45.9, 90.84 ]
                    [47, 90.32 ]
                    [47.5, 90.22 ]
                    [48, 90.17 ]
                    [50.7, 90.19 ]
                    [51.5, 90.17 ]
```

```
                    [52.2, 90.13 ]
                    [52.7, 90.12 ]
                    [53.3, 90.14 ]
                    [53.5, 90.31 ]
                    [53.9, 90.59 ]
                    [54.3, 90.87 ]
                    [54.7, 91.04 ]
                    [55.3, 91.24 ]
                    [55.5, 91.26 ]
                    [63.7, 91.37 ]
                    [100.1097, 91.43 ]
*%-----------------|-----------------------------------------------------------|
*   -JFSA 2021-02-26  "S-1-FO-F-D" is a part of S-1 sub-catchment. It is moved to drain before station 6016 on Jock River
*CONTINUOUS STANDHYD NHYD=["S-1-FO-F-D"], DT=[1]min, AREA=[14.96](ha),
*                    XIMP=[0.65], TIMP=[0.65], DWF=[0](cms), LOSS=[2],
*                    SCS curve number CN=[74],
*                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[0.5](%),
*                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
*                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[0.5](%),
*                            LGI=[315.806](m), MNI=[0.013], SCI=[0](min),
*                    Continuous simulation parameters:
*                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
*                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                    InterEventTime=[18](hrs),   END=-1
*%-----------------|-----------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["S-1-FO-F-D"], DT=[1]min, AREA=[14.96](ha),
                    DWF=[0](cms), CN/C=[77],  IA=[4.67](mm),
                    N=[3], TP=[1.007]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
*COMPUTE DUALHYD     NHYDin=["S-1-FO-F-D"], CINLET=[1.749](cms), NINLET=[1],
*                    MajNHYD=["S-1FO-F-DJ"]
*                    MinNHYD=["S-1FO-F-DN"]
*                    TMJSTO=[9999999](cu-m)
*%-----------------|-----------------------------------------------------------|
*ADD HYD             NHYDsum=["S-1FO-F-DS"], NHYDs to add=["S-1FO-F-DJ"+"S-1FO-F-DN"]
*%-----------------|-----------------------------------------------------------|
*ROUTE RESERVOIR     NHYDout=["S-1FO-F-DR"] ,NHYDin=["S-1FO-F-DS"] ,
*                    RDT=[1](min),
*                          TABLE of ( OUTFLOW-STORAGE ) values
*                                      (cms) - (ha-m)
*                                    [ 0.0     , 0.0 ]
*                                    [ 0.1788, 0.5966 ]
*                                    [    -1  ,  -1    ]  (max twenty pts)
*                          NHYDovf=["S-1FoFDovf"]
*%-----------------|-----------------------------------------------------------|
*   -JFSA 2021-02-26  "S-1-D8" is a part of S-1 sub-catchment. It is moved to drain before station 6016 on Jock River
*   -JFSA 2021-03-02  "S-1-D8" is Borrisokane Rd. so it will remain STANDHYD in all scenarios
CONTINUOUS STANDHYD NHYD=["S-1-D8"], DT=[1](min), AREA=[5.27](ha), XIMP=[0.65], TIMP=[0.65], DWF=[0](cms),
                    LOSS=[2], SCS curve number CN=[75], Pervious surfaces: IAper=[4.67](mm), SLPP=[2.0](%),
                    LGP=[40](m), MNP=[0.25], SCP=[0](min), Impervious surfaces: IAimp=[1.57](mm), SLPI=[0.75](%),
                    LGI=[187.439](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
```

```
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs),   END=-1
*%-----------------|-----------------------------------------------------------|
*  This is a road so it is always STANDHYD
*CONTINUOUS NASHYD   NHYD=["S-1-D8"], DT=[1]min, AREA=[5.27](ha),
*                    DWF=[0](cms), CN/C=[77],  IA=[4.67](mm),
*                    N=[3], TP=[1.10]hrs,
*                    Continuous simulation parameters:
*                    IaRECper=[4](hrs),
*                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                    InterEventTime=[12](hrs)
*                    Baseflow simulation parameters:
*                    BaseFlowOption=[1] ,
*                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
*                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
*COMPUTE DUALHYD     NHYDin=["S-1-D8"], CINLET=[2.279](cms), NINLET=[1],
*                    MajNHYD=["S-1-D8J"]

*                    TMJSTO=[9999999](cu-m)
*%-----------------|-----------------------------------------------------------|
*ADD HYD             NHYDsum=["S-1-D8S"], NHYDs to add=["S-1-D8J"+"S-1-D8N"]
*%-----------------|-----------------------------------------------------------|
*ADD HYD             NHYDsum=["S-1-D"], NHYDs to add=["S-1-Okeefe"+"S-1"+"S-1-Fost"]
*%-----------------|-----------------------------------------------------------|
*COMPUTE DUALHYD     NHYDin=["S-1-D"], CINLET=[11.616](cms), NINLET=[1],
*                    MajNHYD=["S-1-D-MJ"]
*                    MinNHYD=["S-1-D-MN"]
*                    TMJSTO=[5974](cu-m)
*%-----------------|-----------------------------------------------------------|
*ADD HYD             NHYDsum=["S-1-DEV"], NHYDs to add=["S-1-D-MJ"+"S-1-D-MN"]
*%-----------------|-----------------------------------------------------------|
*ROUTE RESERVOIR     NHYDout=["S-1-D8R"] ,NHYDin=["S-1-D8S"] ,
*                    RDT=[1](min),
*                          TABLE of ( OUTFLOW-STORAGE ) values
*                                      (cms) - (ha-m)
*                                    [ 0.0     , 0.0 ]
*                                    [ 0.0630, 0.2102 ]
*                                    [    -1  ,  -1    ]  (max twenty pts)
*                          NHYDovf=["S-1-D8Rovf"]
*%-----------------|-----------------------------------------------------------|
*   -JFSA 2021-02-26  "S-1-A" is a part of S-1 sub-catchment. It is moved to drain
before station 6016 on Jock River
CONTINUOUS NASHYD   NHYD=["S-1-A"], DT=[1]min, AREA=[75.88](ha),
                    DWF=[0](cms), CN/C=[77],  IA=[4.67](mm),
                    N=[3], TP=[0.619]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
*     -JFSA, 2021-01-22  "W_CLAR_UNDE" (west of Clarke sub-catchment) discharges
directly to the jock river through a road side ditch on the west side of Borrisokane
road (station 6016)
CONTINUOUS NASHYD   NHYD=["W_CLAR_UNDE"], DT=[1]min, AREA=[35.65](ha),
                    DWF=[0](cms), CN/C=[77],  IA=[4.67](mm),
                    N=[3], TP=[1.10]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
```

```
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
ADD HYD             NHYDsum=["SN_FO"], NHYDs to add=["N_FO"+"520-out"+"MS_P10"+"P10-OVF"+"W_CLAR_UNDE"+"S-1-FO-F-D"+"S-1-D8"+"S-1-A"]
*%-----------------|-----------------------------------------------------------|
SAVE HYD            NHYD=["SN_FO"],   # OF PCYCLES=[-1],  ICASEsh=[1]
                    HYD_COMMENT=["Total Flows at Foster Drain"]
*%-----------------|-----------------------------------------------------------|
*# Hydrograph from Node Foster routed to Node at Cedarview Road
*# Channel X-Section obtained from RVCA Hydraulic Model - Station 6016
*#
ROUTE CHANNEL       NHYDout=["N_CE"] ,NHYDin=["SN_FO"] ,
                    RDT=[1](min),
                    CHLGTH=[159](m),  CHSLOPE=[0.0818](%),
                                        FPSLOPE=[0.0818](%),
                    SECNUM=[1.0],       NSEG=[3]
                    ( SEGROUGH, SEGDIST (m))=
                      [0.050,-15.46
                      -0.035,26.55
                      0.050,116.76] NSEG times
                    ( DISTANCE (m), ELEVATION (m))=
                    [-645.23, 91.50]
                    [-391.20, 91.50]
                    [-91.00, 91.50]
                    [-85.52, 91.50]
                    [-15.46, 89.40]
                    [-9.79, 89.31]
                    [-3.22, 86.24]
                    [3.22, 85.07]
                    [10.96, 85.79]
                    [16.44, 86.49]
                    [26.55, 89.45]
                    [29.03, 90.27]
                    [35.76, 90.67]
                    [36.67, 91.00]
                    [108.08, 91.00]
                    [109.82, 90.50]
                    [112.04, 90.50]
                    [114.62, 91.00]
                    [116.76, 91.50]
*%-----------------|-----------------------------------------------------------|
*#******************************************************************************
*#    Catchment S-1
*#    - To Jock River (north and south of Jock)
*#    - Primarily agricultural fields; portion of sand quarry
*%-----------------|-----------------------------------------------------------|
*%    -2020-12-17 "S-1-Undev" and "S-1-Fost" was a part of Foster drain, they are below the foster pond. Now they are added to S-1 subcatchment based on Project 1474-BCDC, JFSA, Nov. 2020
*%    -2020-12-17 Change O-14 (it was part of Okeefe drain) to "S-1-Okeefe" and add it to S-1 subcatchment based on Project 1474-BCDC, JFSA, Nov. 2020
*%    -2020-12-17 Add "S-1-BCDC" as NASHYD
*%    -2020-12-17 all other S-1 subcatchment as STANDHYD with DUALHYD and ROUTE RESERVOIR
*%-----------------|-----------------------------------------------------------|
*#******************************************************************************
*   -JFSA 2021-02-26  "S-1-A" is a part of S-1 sub-catchment. It is moved to drain before station 6016 on Jock River
*CONTINUOUS NASHYD   NHYD=["S-1-A"], DT=[1]min, AREA=[75.88](ha),
*                    DWF=[0](cms), CN/C=[77],  IA=[4.67](mm),
*                    N=[3], TP=[0.619]hrs,
*                    Continuous simulation parameters:
*                    IaRECper=[4](hrs),
*                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
```

```
*                    InterEventTime=[12](hrs)
*                    Baseflow simulation parameters:
*                    BaseFlowOption=[1] ,
*                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
*                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["S-1-B"], DT=[1]min, AREA=[55.36](ha),
                    DWF=[0](cms), CN/C=[77],  IA=[4.67](mm),
                    N=[3], TP=[0.451]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
*#    -  JFSA 2021-02-24 change the name from S-1-BCDC to S-1-A and S-1-B. Change their
TP values based on the new areas compared to the old ones.
*CONTINUOUS NASHYD   NHYD=["S-1-BCDC"], DT=[1]min, AREA=[134.9](ha),
*                    DWF=[0](cms), CN/C=[77],  IA=[4.67](mm),
*                    N=[3], TP=[1.10]hrs,
*                    Continuous simulation parameters:
*                    IaRECper=[4](hrs),
*                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                    InterEventTime=[12](hrs)
*                    Baseflow simulation parameters:
*                    BaseFlowOption=[1] ,
*                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
*                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
*#    -  JFSA 2021-02-24 "S-1-BCDC-1" and "S-1-BCDC-2" are not existing anymore.
"S-1-BCDC-1" is part of "S-1-FO-D2" and "S-1-BCDC-2" is part of "S-1-D2" and "S-1-D3"
*CONTINUOUS NASHYD   NHYD=["S-1-BCDC-1"], DT=[1]min, AREA=[0.3](ha),
*                    DWF=[0](cms), CN/C=[77],  IA=[4.67](mm),
*                    N=[3], TP=[1.10]hrs,
*                    Continuous simulation parameters:
*                    IaRECper=[4](hrs),
*                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                    InterEventTime=[12](hrs)
*                    Baseflow simulation parameters:
*                    BaseFlowOption=[1] ,
*                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
*                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
*CONTINUOUS NASHYD   NHYD=["S-1-BCDC-2"], DT=[1]min, AREA=[1.3](ha),
*                    DWF=[0](cms), CN/C=[77],  IA=[4.67](mm),
*                    N=[3], TP=[1.10]hrs,
*                    Continuous simulation parameters:
*                    IaRECper=[4](hrs),
*                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                    InterEventTime=[12](hrs)
*                    Baseflow simulation parameters:
*                    BaseFlowOption=[1] ,
*                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
*                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
*#    -  JFSA 2021-01-19, after adding Greenbank pond, "S-1-BCDC-3" is not existing
anymore
*CONTINUOUS NASHYD   NHYD=["S-1-BCDC-3"], DT=[1]min, AREA=[3.9](ha),
*                    DWF=[0](cms), CN/C=[77],  IA=[4.67](mm),
*                    N=[3], TP=[1.10]hrs,
*                    Continuous simulation parameters:
*                    IaRECper=[4](hrs),
*                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
```

```
*                    InterEventTime=[12](hrs)
*                    Baseflow simulation parameters:
*                    BaseFlowOption=[1] ,
*                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
*                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
*   -JFSA 2021-02-25  "S-1-Okeefe" is a part of S-1 sub-catchment. It is moved to drain before station 7245 on Jock River
*CONTINUOUS STANDHYD NHYD=["S-1-Okeefe"], DT=[1](min), AREA=[44.93](ha), XIMP=[0.65], TIMP=[0.65], DWF=[0](cms),
*                    LOSS=[2], SCS curve number CN=[75], Pervious surfaces: IAper=[4.67](mm), SLPP=[2.0](%),
*                    LGP=[40](m), MNP=[0.25], SCP=[0](min), Impervious surfaces: IAimp=[1.57](mm), SLPI=[0.75](%),
*                    LGI=[547.296](m), MNI=[0.013], SCI=[0](min),
*                    Continuous simulation parameters:
*                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
*                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                    InterEventTime=[12](hrs),   END=-1
*%-----------------|-----------------------------------------------------------|
*COMPUTE DUALHYD     NHYDin=["S-1-Okeefe"], CINLET=[4.796](cms), NINLET=[1],
*                    MajNHYD=["S-1-OkMJ"]
*                    MinNHYD=["S-1-OkMN"]
*                    TMJSTO=[9999999](cu-m)
*%-----------------|-----------------------------------------------------------|
*ADD HYD             NHYDsum=["S-1-OkS"], NHYDs to add=["S-1-OkMJ"+"S-1-OkMN"]
*%-----------------|-----------------------------------------------------------|
*ROUTE RESERVOIR     NHYDout=["S-1-OkSR"] ,NHYDin=["S-1-OkS"] ,
*                    RDT=[1](min),
*                          TABLE of ( OUTFLOW-STORAGE ) values
*                                      (cms) - (ha-m)
*                                    [ 0.0     , 0.0 ]
*                                    [ 0.5370, 1.7917 ]
*                                    [    -1  ,  -1    ]  (max twenty pts)
*                          NHYDovf=["S-1-OkSovf"]
*%-----------------|-----------------------------------------------------------|
*CONTINUOUS NASHYD   NHYD=["S-1-Okeefe"], DT=[1]min, AREA=[44.93](ha),
*                    DWF=[0](cms), CN/C=[77],  IA=[4.67](mm),
*                    N=[3], TP=[1.049]hrs,
*                    Continuous simulation parameters:
*                    IaRECper=[4](hrs),
*                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                    InterEventTime=[12](hrs)
*                    Baseflow simulation parameters:
*                    BaseFlowOption=[1] ,
*                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
*                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
*   -JFSA 2021-02-26  "S-1-FO-D1" is a part of S-1 sub-catchment. It is moved to drain before station 520 on Foster Drain
*CONTINUOUS STANDHYD NHYD=["S-1-FO-D1"], DT=[1]min, AREA=[5.11](ha),
*                    XIMP=[0.65], TIMP=[0.65], DWF=[0](cms), LOSS=[2],
*                    SCS curve number CN=[74],
*                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[0.5](%),
*                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
*                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[0.5](%),
*                            LGI=[184.572](m), MNI=[0.013], SCI=[0](min),
*                    Continuous simulation parameters:
*                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
*                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                    InterEventTime=[18](hrs),   END=-1
*%-----------------|-----------------------------------------------------------|
*COMPUTE DUALHYD     NHYDin=["S-1-FO-D1"], CINLET=[0.605](cms), NINLET=[1],
*                    MajNHYD=["S-1-FO-D1J"]
*                    MinNHYD=["S-1-FO-D1N"]
*                    TMJSTO=[9999999](cu-m)
```

```
*%-----------------|-----------------------------------------------------------|
*ADD HYD             NHYDsum=["S-1-FO-D1S"], NHYDs to add=["S-1-FO-D1N"+"S-1-FO-D1J"]
*%-----------------|-----------------------------------------------------------|
*ROUTE RESERVOIR     NHYDout=["S-1-FO-D1R"] ,NHYDin=["S-1-FO-D1S"] ,
*                    RDT=[1](min),
*                          TABLE of ( OUTFLOW-STORAGE ) values
*                                      (cms) - (ha-m)
*                                    [ 0.0     , 0.0 ]
*                                    [ 0.0611, 0.2038 ]
*                                    [    -1  ,  -1    ]  (max twenty pts)
*                          NHYDovf=["S-1FOD1ovf"]
*%-----------------|-----------------------------------------------------------|
*CONTINUOUS NASHYD   NHYD=["S-1-FO-D1"], DT=[1]min, AREA=[5.11](ha),
*                    DWF=[0](cms), CN/C=[77],  IA=[4.67](mm),
*                    N=[3], TP=[1.10]hrs,
*                    Continuous simulation parameters:
*                    IaRECper=[4](hrs),
*                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                    InterEventTime=[12](hrs)
*                    Baseflow simulation parameters:
*                    BaseFlowOption=[1] ,
*                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
*                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
*   -JFSA 2021-02-26  "S-1-FO-D2" is a part of S-1 sub-catchment. It is moved to drain
before station 980 on Foster Drain
*CONTINUOUS STANDHYD NHYD=["S-1-FO-D2"], DT=[1]min, AREA=[4.94](ha),
*                    XIMP=[0.55], TIMP=[0.55], DWF=[0](cms), LOSS=[2],
*                    SCS curve number CN=[74],
*                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[0.5](%),
*                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
*                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[0.5](%),
*                            LGI=[181.475](m), MNI=[0.013], SCI=[0](min),
*                    Continuous simulation parameters:
*                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
*                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                    InterEventTime=[18](hrs),   END=-1
*%-----------------|-----------------------------------------------------------|
*CONTINUOUS NASHYD   NHYD=["S-1-FO-D2"], DT=[1]min, AREA=[4.94](ha),
*                    DWF=[0](cms), CN/C=[77],  IA=[4.67](mm),
*                    N=[3], TP=[1.10]hrs,
*                    Continuous simulation parameters:
*                    IaRECper=[4](hrs),
*                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                    InterEventTime=[12](hrs)
*                    Baseflow simulation parameters:
*                    BaseFlowOption=[1] ,
*                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
*                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
*COMPUTE DUALHYD     NHYDin=["S-1-FO-D2"], CINLET=[0.508](cms), NINLET=[1],
*                    MajNHYD=["S-1-FO-D2J"]
*                    MinNHYD=["S-1-FO-D2N"]
*                    TMJSTO=[9999999](cu-m)
*%-----------------|-----------------------------------------------------------|
*ADD HYD             NHYDsum=["S-1-FO-D2S"], NHYDs to add=["S-1-FO-D2J"+"S-1-FO-D2N"]
*%-----------------|-----------------------------------------------------------|
*ROUTE RESERVOIR     NHYDout=["S-1-FO-D2R"] ,NHYDin=["S-1-FO-D2S"] ,
*                    RDT=[1](min),
*                          TABLE of ( OUTFLOW-STORAGE ) values
*                                      (cms) - (ha-m)
*                                    [ 0.0     , 0.0 ]
*                                    [ 0.0590, 0.1970 ]
*                                    [    -1  ,  -1    ]  (max twenty pts)
*                          NHYDovf=["S-1FOD2ovf"]
*%-----------------|-----------------------------------------------------------|
```

```
*   -JFSA 2021-02-26  "S-1-FO-F-D" is a part of S-1 sub-catchment. It is moved to drain before station 6016 on Jock River
*CONTINUOUS STANDHYD NHYD=["S-1-FO-F-D"], DT=[1]min, AREA=[14.96](ha),
*                    XIMP=[0.65], TIMP=[0.65], DWF=[0](cms), LOSS=[2],
*                    SCS curve number CN=[74],
*                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[0.5](%),
*                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
*                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[0.5](%),
*                            LGI=[315.806](m), MNI=[0.013], SCI=[0](min),
*                    Continuous simulation parameters:
*                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
*                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                    InterEventTime=[18](hrs),   END=-1
*%-----------------|-----------------------------------------------------------|
*CONTINUOUS NASHYD   NHYD=["S-1-FO-F-D"], DT=[1]min, AREA=[14.96](ha),
*                    DWF=[0](cms), CN/C=[77],  IA=[4.67](mm),
*                    N=[3], TP=[1.007]hrs,
*                    Continuous simulation parameters:
*                    IaRECper=[4](hrs),
*                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                    InterEventTime=[12](hrs)
*                    Baseflow simulation parameters:
*                    BaseFlowOption=[1] ,
*                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
*                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
*COMPUTE DUALHYD     NHYDin=["S-1-FO-F-D"], CINLET=[1.749](cms), NINLET=[1],
*                    MajNHYD=["S-1FO-F-DJ"]
*                    MinNHYD=["S-1FO-F-DN"]
*                    TMJSTO=[9999999](cu-m)
*%-----------------|-----------------------------------------------------------|
*ADD HYD             NHYDsum=["S-1FO-F-DS"], NHYDs to add=["S-1FO-F-DJ"+"S-1FO-F-DN"]
*%-----------------|-----------------------------------------------------------|
*ROUTE RESERVOIR     NHYDout=["S-1FO-F-DR"] ,NHYDin=["S-1FO-F-DS"] ,
*                    RDT=[1](min),
*                          TABLE of ( OUTFLOW-STORAGE ) values
*                                      (cms) - (ha-m)
*                                    [ 0.0     , 0.0 ]
*                                    [ 0.1788, 0.5966 ]
*                                    [    -1  ,  -1    ]  (max twenty pts)
*                          NHYDovf=["S-1FoFDovf"]
*%-----------------|-----------------------------------------------------------|
*CONTINUOUS STANDHYD NHYD=["S-1-D1"], DT=[1](min), AREA=[21.67](ha), XIMP=[0.65], TIMP=[0.65], DWF=[0](cms),
*                    LOSS=[2], SCS curve number CN=[75], Pervious surfaces: IAper=[4.67](mm), SLPP=[2.0](%),
*                    LGP=[40](m), MNP=[0.25], SCP=[0](min), Impervious surfaces: IAimp=[1.57](mm), SLPI=[0.75](%),
*                    LGI=[380.088](m), MNI=[0.013], SCI=[0](min),
*                    Continuous simulation parameters:
*                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
*                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                    InterEventTime=[12](hrs),   END=-1
*%-----------------|-----------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["S-1-D1"], DT=[1]min, AREA=[21.67](ha),
                    DWF=[0](cms), CN/C=[77],  IA=[4.67](mm),
                    N=[3], TP=[1.066]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
```

```
*COMPUTE DUALHYD     NHYDin=["S-1-D1"], CINLET=[2.482](cms), NINLET=[1],
*                    MajNHYD=["S-1-D1J"]
*                    MinNHYD=["S-1-D1N"]
*                    TMJSTO=[9999999](cu-m)
*%-----------------|-------------------------------------------------------------|
*ADD HYD             NHYDsum=["S-1-D1S"], NHYDs to add=["S-1-D1J"+"S-1-D1N"]
*%-----------------|-------------------------------------------------------------|
*ROUTE RESERVOIR     NHYDout=["S-1-D1R"] ,NHYDin=["S-1-D1S"] ,
*                    RDT=[1](min),
*                          TABLE of ( OUTFLOW-STORAGE ) values
*                                      (cms) - (ha-m)
*                                    [ 0.0     , 0.0 ]
*                                    [ 0.2590, 0.8642 ]
*                                    [    -1  ,  -1    ]  (max twenty pts)
*                          NHYDovf=["S-1-D1Rovf"]
*%-----------------|-------------------------------------------------------------|
*   -JFSA 2021-02-25  "S-1-D2" and "S-1-D3" are part of S-1 sub-catchment. They are moved to drain before station 6215 on Jock River
*CONTINUOUS STANDHYD NHYD=["S-1-D2"], DT=[1](min), AREA=[18.67](ha), XIMP=[0.65], TIMP=[0.65], DWF=[0](cms),
*                    LOSS=[2], SCS curve number CN=[75], Pervious surfaces: IAper=[4.67](mm), SLPP=[2.0](%),
*                    LGP=[40](m), MNP=[0.25], SCP=[0](min), Impervious surfaces: IAimp=[1.57](mm), SLPI=[0.75](%),
*                    LGI=[352.798](m), MNI=[0.013], SCI=[0](min),
*                    Continuous simulation parameters:
*                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
*                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                    InterEventTime=[12](hrs),   END=-1
*%-----------------|-------------------------------------------------------------|
*CONTINUOUS NASHYD   NHYD=["S-1-D2"], DT=[1]min, AREA=[18.67](ha),
*                    DWF=[0](cms), CN/C=[77],  IA=[4.67](mm),
*                    N=[3], TP=[1.120]hrs,
*                    Continuous simulation parameters:
*                    IaRECper=[4](hrs),
*                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                    InterEventTime=[12](hrs)
*                    Baseflow simulation parameters:
*                    BaseFlowOption=[1] ,
*                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
*                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-------------------------------------------------------------|
*COMPUTE DUALHYD     NHYDin=["S-1-D2"], CINLET=[2.062](cms), NINLET=[1],
*                    MajNHYD=["S-1-D2J"]
*                    MinNHYD=["S-1-D2N"]
*                    TMJSTO=[9999999](cu-m)
*%-----------------|-------------------------------------------------------------|
*ADD HYD             NHYDsum=["S-1-D2S"], NHYDs to add=["S-1-D2J"+"S-1-D2N"]
*%-----------------|-------------------------------------------------------------|
*ROUTE RESERVOIR     NHYDout=["S-1-D2R"] ,NHYDin=["S-1-D2S"] ,
*                    RDT=[1](min),
*                          TABLE of ( OUTFLOW-STORAGE ) values
*                                      (cms) - (ha-m)
*                                    [ 0.0     , 0.0 ]
*                                    [ 0.2231, 0.7445 ]
*                                    [    -1  ,  -1    ]  (max twenty pts)
*                          NHYDovf=["S-1-D2Rovf"]
*%-----------------|-------------------------------------------------------------|
*CONTINUOUS STANDHYD NHYD=["S-1-D3"], DT=[1](min), AREA=[6.79](ha), XIMP=[0.65], TIMP=[0.65], DWF=[0](cms),
*                    LOSS=[2], SCS curve number CN=[75], Pervious surfaces: IAper=[4.67](mm), SLPP=[2.0](%),
*                    LGP=[40](m), MNP=[0.25], SCP=[0](min), Impervious surfaces: IAimp=[1.57](mm), SLPI=[0.75](%),
*                    LGI=[212.760](m), MNI=[0.013], SCI=[0](min),
*                    Continuous simulation parameters:
```

```
*                        IaRECper=[4](hrs),  IaRECimp=[4](hrs),
*                        SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                        InterEventTime=[12](hrs),   END=-1
*%-----------------|-----------------------------------------------------------|
*CONTINUOUS NASHYD       NHYD=["S-1-D3"], DT=[1]min, AREA=[6.79](ha),
*                        DWF=[0](cms), CN/C=[77],  IA=[4.67](mm),
*                        N=[3], TP=[1.281]hrs,
*                        Continuous simulation parameters:
*                        IaRECper=[4](hrs),
*                        SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                        InterEventTime=[12](hrs)
*                        Baseflow simulation parameters:
*                        BaseFlowOption=[1] ,
*                        InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
*                        VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
*COMPUTE DUALHYD         NHYDin=["S-1-D3"], CINLET=[0.719](cms), NINLET=[1],
*                        MajNHYD=["S-1-D3J"]
*                        MinNHYD=["S-1-D3N"]
*                        TMJSTO=[9999999](cu-m)
*%-----------------|-----------------------------------------------------------|
*ADD HYD                 NHYDsum=["S-1-D3S"], NHYDs to add=["S-1-D3J"+"S-1-D3N"]
*%-----------------|-----------------------------------------------------------|
*ROUTE RESERVOIR         NHYDout=["S-1-D3R"] ,NHYDin=["S-1-D3S"] ,
*                        RDT=[1](min),
*                              TABLE of ( OUTFLOW-STORAGE ) values
*                                          (cms) - (ha-m)
*                                        [ 0.0     , 0.0 ]
*                                        [ 0.0811, 0.2708 ]
*                                        [    -1  ,  -1    ]  (max twenty pts)
*                              NHYDovf=["S-1-D3Rovf"]
*%-----------------|-----------------------------------------------------------|
*CONTINUOUS STANDHYD NHYD=["S-1-D4"], DT=[1](min), AREA=[3.28](ha), XIMP=[0.65], TIMP=[0.65], DWF=[0](cms),
*                        LOSS=[2], SCS curve number CN=[75], Pervious surfaces: IAper=[4.67](mm), SLPP=[2.0](%),
*                        LGP=[40](m), MNP=[0.25], SCP=[0](min), Impervious surfaces: IAimp=[1.57](mm), SLPI=[0.75](%),
*                        LGI=[147.874](m), MNI=[0.013], SCI=[0](min),
*                        Continuous simulation parameters:
*                        IaRECper=[4](hrs),  IaRECimp=[4](hrs),
*                        SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                        InterEventTime=[12](hrs),   END=-1
*%-----------------|-----------------------------------------------------------|
CONTINUOUS NASHYD       NHYD=["S-1-D4"], DT=[1]min, AREA=[3.28](ha),
                        DWF=[0](cms), CN/C=[77],  IA=[4.67](mm),
                        N=[3], TP=[1.10]hrs,
                        Continuous simulation parameters:
                        IaRECper=[4](hrs),
                        SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                        InterEventTime=[12](hrs)
                        Baseflow simulation parameters:
                        BaseFlowOption=[1] ,
                        InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                        VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
*COMPUTE DUALHYD         NHYDin=["S-1-D4"], CINLET=[0.373](cms), NINLET=[1],
*                        MajNHYD=["S-1-D4J"]
*                        MinNHYD=["S-1-D4N"]
*                        TMJSTO=[9999999](cu-m)
*%-----------------|-----------------------------------------------------------|
*ADD HYD                 NHYDsum=["S-1-D4S"], NHYDs to add=["S-1-D4J"+"S-1-D4N"]
*%-----------------|-----------------------------------------------------------|
*ROUTE RESERVOIR         NHYDout=["S-1-D4R"] ,NHYDin=["S-1-D4S"] ,
*                        RDT=[1](min),
*                              TABLE of ( OUTFLOW-STORAGE ) values
```

```
*                                     (cms) - (ha-m)
*                                   [ 0.0     , 0.0 ]
*                                   [ 0.0392, 0.1308 ]
*                                   [    -1  ,  -1    ]  (max twenty pts)
*                         NHYDovf=["S-1-D4Rovf"]
*%-----------------|-----------------------------------------------------------|
*CONTINUOUS STANDHYD NHYD=["S-1-D5"], DT=[1](min), AREA=[12.84](ha), XIMP=[0.65],
TIMP=[0.65], DWF=[0](cms),


*                   LGP=[40](m), MNP=[0.25], SCP=[0](min), Impervious surfaces:
IAimp=[1.57](mm), SLPI=[0.75](%),
*                   LGI=[292.57](m), MNI=[0.013], SCI=[0](min),
*                   Continuous simulation parameters:
*                   IaRECper=[4](hrs),  IaRECimp=[4](hrs),
*                   SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                   InterEventTime=[12](hrs),   END=-1
*%-----------------|-----------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["S-1-D5"], DT=[1]min, AREA=[12.84](ha),
                    DWF=[0](cms), CN/C=[77],  IA=[4.67](mm),
                    N=[3], TP=[1.10]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
*COMPUTE DUALHYD     NHYDin=["S-1-D5"], CINLET=[1.395](cms), NINLET=[1],
*                   MajNHYD=["S-1-D5J"]
*                   MinNHYD=["S-1-D5N"]
*                   TMJSTO=[9999999](cu-m)
*%-----------------|-----------------------------------------------------------|
*ADD HYD             NHYDsum=["S-1-D5S"], NHYDs to add=["S-1-D5J"+"S-1-D5N"]
*%-----------------|-----------------------------------------------------------|
*ROUTE RESERVOIR     NHYDout=["S-1-D5R"] ,NHYDin=["S-1-D5S"] ,
*                   RDT=[1](min),
*                         TABLE of ( OUTFLOW-STORAGE ) values
*                                     (cms) - (ha-m)
*                                   [ 0.0     , 0.0 ]

*                                   [    -1  ,  -1    ]  (max twenty pts)
*                         NHYDovf=["S-1-D5Rovf"]
*%-----------------|-----------------------------------------------------------|
*CONTINUOUS STANDHYD NHYD=["S-1-D6"], DT=[1](min), AREA=[1.75](ha), XIMP=[0.65],
TIMP=[0.65], DWF=[0](cms),
*                   LOSS=[2], SCS curve number CN=[75], Pervious surfaces:
IAper=[4.67](mm), SLPP=[2.0](%),
*                   LGP=[40](m), MNP=[0.25], SCP=[0](min), Impervious surfaces:
IAimp=[1.57](mm), SLPI=[0.75](%),
*                   LGI=[108.01](m), MNI=[0.013], SCI=[0](min),
*                   Continuous simulation parameters:
*                   IaRECper=[4](hrs),  IaRECimp=[4](hrs),
*                   SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                   InterEventTime=[12](hrs),   END=-1
*%-----------------|-----------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["S-1-D6"], DT=[1]min, AREA=[1.75](ha),
                    DWF=[0](cms), CN/C=[77],  IA=[4.67](mm),
                    N=[3], TP=[1.10]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
```

```
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
*COMPUTE DUALHYD     NHYDin=["S-1-D6"], CINLET=[0.218](cms), NINLET=[1],
*                    MajNHYD=["S-1-D6J"]
*                    MinNHYD=["S-1-D6N"]
*                    TMJSTO=[9999999](cu-m)
*%-----------------|-----------------------------------------------------------|
*ADD HYD             NHYDsum=["S-1-D6S"], NHYDs to add=["S-1-D6J"+"S-1-D6N"]
*%-----------------|-----------------------------------------------------------|
*ROUTE RESERVOIR     NHYDout=["S-1-D6R"] ,NHYDin=["S-1-D6S"] ,
*                    RDT=[1](min),
*                          TABLE of ( OUTFLOW-STORAGE ) values
*                                      (cms) - (ha-m)
*                                    [ 0.0     , 0.0 ]
*                                    [ 0.0209, 0.0698 ]
*                                    [    -1  ,  -1    ]  (max twenty pts)
*                          NHYDovf=["S-1-D6Rovf"]
*%-----------------|-----------------------------------------------------------|
*CONTINUOUS STANDHYD NHYD=["S-1-D7"], DT=[1](min), AREA=[2.03](ha), XIMP=[0.65], TIMP=[0.65], DWF=[0](cms),
*                    LOSS=[2], SCS curve number CN=[75], Pervious surfaces: IAper=[4.67](mm), SLPP=[2.0](%),

*                    LGI=[116.33](m), MNI=[0.013], SCI=[0](min),
*                    Continuous simulation parameters:
*                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
*                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                    InterEventTime=[12](hrs),   END=-1
*%-----------------|-----------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["S-1-D7"], DT=[1]min, AREA=[2.03](ha),
                    DWF=[0](cms), CN/C=[77],  IA=[4.67](mm),
                    N=[3], TP=[1.10]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
*COMPUTE DUALHYD     NHYDin=["S-1-D7"], CINLET=[2.279](cms), NINLET=[1],
*                    MajNHYD=["S-1-D7J"]
*                    MinNHYD=["S-1-D7N"]
*                    TMJSTO=[9999999](cu-m)
*%-----------------|-----------------------------------------------------------|
*ADD HYD             NHYDsum=["S-1-D7S"], NHYDs to add=["S-1-D7J"+"S-1-D7N"]
*%-----------------|-----------------------------------------------------------|
*ROUTE RESERVOIR     NHYDout=["S-1-D7R"] ,NHYDin=["S-1-D7S"] ,
*                    RDT=[1](min),
*                          TABLE of ( OUTFLOW-STORAGE ) values
*                                      (cms) - (ha-m)
*                                    [ 0.0     , 0.0 ]
*                                    [ 0.0243, 0.0810 ]
*                                    [    -1  ,  -1    ]  (max twenty pts)
*                          NHYDovf=["S-1-D8Rovf"]
*%-----------------|-----------------------------------------------------------|
*   -JFSA 2021-02-26  "S-1-D8" is a part of S-1 sub-catchment. It is moved to drain before station 6016 on Jock River
*CONTINUOUS STANDHYD NHYD=["S-1-D8"], DT=[1](min), AREA=[5.27](ha), XIMP=[0.65], TIMP=[0.65], DWF=[0](cms),
*                    LOSS=[2], SCS curve number CN=[75], Pervious surfaces: IAper=[4.67](mm), SLPP=[2.0](%),
```

```
*                      LGP=[40](m), MNP=[0.25], SCP=[0](min), Impervious surfaces: IAimp=[1.57](mm), SLPI=[0.75](%),
*                      LGI=[187.439](m), MNI=[0.013], SCI=[0](min),
*                      Continuous simulation parameters:
*                      IaRECper=[4](hrs),  IaRECimp=[4](hrs),
*                      SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                      InterEventTime=[12](hrs),   END=-1
*%-----------------|-----------------------------------------------------------|
*CONTINUOUS NASHYD     NHYD=["S-1-D8"], DT=[1]min, AREA=[5.27](ha),
*                      DWF=[0](cms), CN/C=[77],  IA=[4.67](mm),
*                      N=[3], TP=[1.10]hrs,
*                      Continuous simulation parameters:
*                      IaRECper=[4](hrs),
*                      SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                      InterEventTime=[12](hrs)
*                      Baseflow simulation parameters:
*                      BaseFlowOption=[1] ,
*                      InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
*                      VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
*COMPUTE DUALHYD       NHYDin=["S-1-D8"], CINLET=[2.279](cms), NINLET=[1],
*                      MajNHYD=["S-1-D8J"]
*                      MinNHYD=["S-1-D8N"]
*                      TMJSTO=[9999999](cu-m)
*%-----------------|-----------------------------------------------------------|
*ADD HYD               NHYDsum=["S-1-D8S"], NHYDs to add=["S-1-D8J"+"S-1-D8N"]
*%-----------------|-----------------------------------------------------------|
*ADD HYD               NHYDsum=["S-1-D"], NHYDs to add=["S-1-Okeefe"+"S-1"+"S-1-Fost"]
*%-----------------|-----------------------------------------------------------|
*COMPUTE DUALHYD       NHYDin=["S-1-D"], CINLET=[11.616](cms), NINLET=[1],
*                      MajNHYD=["S-1-D-MJ"]
*                      MinNHYD=["S-1-D-MN"]
*                      TMJSTO=[5974](cu-m)
*%-----------------|-----------------------------------------------------------|
*ADD HYD               NHYDsum=["S-1-DEV"], NHYDs to add=["S-1-D-MJ"+"S-1-D-MN"]
*%-----------------|-----------------------------------------------------------|
*ROUTE RESERVOIR       NHYDout=["S-1-D8R"] ,NHYDin=["S-1-D8S"] ,
*                      RDT=[1](min),
*                            TABLE of ( OUTFLOW-STORAGE ) values
*                                        (cms) - (ha-m)
*                                      [ 0.0     , 0.0 ]
*                                      [ 0.0630, 0.2102 ]
*                                      [    -1  ,  -1    ]  (max twenty pts)
*                            NHYDovf=["S-1-D8Rovf"]
*%-----------------|-----------------------------------------------------------|
*%-----------------|-----------------------------------------------------------|
*       -JFSA 2021-02-08 Clarke (MS_P2 and P2-OVF) and Clarke Undeveloped area (W_CLAR_UNDE) drain to Jock River at Station 5002 instead of Station 4534
*#    Catchment W_CLAR
*#    - To West Clarke Drain (south of the Jock)
*#    - Subdivision with 43% imp. as per Barrhaven South MSS
*#    - 2020-11-30 update CLARKE Tributary Drainage Area to  = 121 ha based on P598(04)-11
*#    - 2020-11-30 split CLARKE Drainage Area to MAJOR and ALL
*#*****************************************************************************
CONTINUOUS STANDHYD NHYD=["W_CLAR_MJ"], DT=[1]min, AREA=[1.772](ha),
                    XIMP=[0.46], TIMP=[0.59], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[77],
                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
                            LGI=[109](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[18](hrs),   END=-1
```

```
*%-----------------|-------------------------------------------------------------|
*COMPUTE DUALHYD      NHYDin=["W_CLAR_MJ"], CINLET=[0.213](cms), NINLET=[1],
*                     MajNHYD=["W_CLAR_MJj"]
*                     MinNHYD=["W_CLAR_MJn"]
*                     TMJSTO=[0.1](cu-m)
*%-----------------|-------------------------------------------------------------|
*# 5-Year + 12% Capture
ROUTE RESERVOIR      NHYDout=["W_CLAR_MJn"] ,NHYDin=["W_CLAR_MJ"] ,
                     RDT=[1](min),
                           TABLE of ( OUTFLOW-STORAGE ) values
                                       (cms) - (ha-m)
                                     [ 0.0     , 0.0 ]
                                     [ 0.213 , 0.0001 ]
                                     [    -1  ,  -1    ]  (max twenty pts)
                           NHYDovf=["W_CLAR_MJj"] ,
*%-----------------|-------------------------------------------------------------|
*     -Clarke_All area from  P 598(04)-11 = 120.207 ha, change to 127.298 ha based on GIS measurements,
*     -JFSA, 2021-01-19  update W_CLAR_ALL to (121.17-1.772=119.398) ha based on GIS measurements W_CLAR is 121.17 ha and W_CLAR_MJ is 1.772 ha
CONTINUOUS STANDHYD NHYD=["W_CLAR_ALL"], DT=[1]min, AREA=[119.398](ha),
                    XIMP=[0.60], TIMP=[0.65], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[77],
                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
                            LGI=[892.18](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[18](hrs),   END=-1
*%-----------------|-------------------------------------------------------------|
ADD HYD             NHYDsum=["W_CLAR"], NHYDs to add=["W_CLAR_ALL"+"W_CLAR_MJj"]
*%-----------------|-------------------------------------------------------------|
SAVE HYD            NHYD=["W_CLAR"],   # OF PCYCLES=[-1],  ICASEsh=[1]
                    HYD_COMMENT=["Total Flows to West Clarke"]
*#*****************************************************************************
*#    West Clarke Pond 2
*#    - Rating curve obtained from Barrhaven South MSS modeling
*#    - Tributary Drainage Area to MSS Pond 2 = 241 ha
*#*****************************************************************************
ROUTE RESERVOIR      NHYDout=["MS_P2"],  NHYDin=["W_CLAR"],
                     RDT=[1](min),
                           TABLE of ( OUTFLOW-STORAGE ) values
                                       (cms) - (ha-m)
                                     [   0.0 ,  0.0 ]
                                     [ 0.128 , 0.161 ]
                                     [ 0.138 , 0.409 ]
                                     [ 0.148 , 0.68 ]
                                     [ 0.227 , 0.931 ]
                                     [ 0.354 , 1.223 ]
                                     [ 0.505 , 1.52 ]
                                     [ 0.666 , 1.821 ]
                                     [ 0.831 , 2.123 ]
                                     [ 0.995 , 2.434 ]
                                     [ 1.069 , 2.583 ]
                                     [ 1.51 , 2.647 ]
                                     [ 4.904 , 2.861 ]
                                     [ 13.048 , 3.188 ]
                                     [ 23.745 , 3.523 ]
                                     [ 36.474 , 3.871 ]
                                     [ 45.938 , 4.127 ]
                                     [ 61.652 , 4.539 ]
                                     [   -1  ,  -1  ]  (max twenty pts)
                           NHYDovf=["P2-OVF"]
*%-----------------|-------------------------------------------------------------|
```

```
*#****************************************************************************
*     -JFSA, 2021-01-22  "W_CLAR_UNDE" (west of Clarke sub-catchment) discharges directly to the jock river through a road side ditch on the west side of Borrisokane road (station 6016)
*CONTINUOUS NASHYD   NHYD=["W_CLAR_UNDE"], DT=[1]min, AREA=[35.65](ha),
*                    DWF=[0](cms), CN/C=[77],  IA=[4.67](mm),
*                    N=[3], TP=[1.10]hrs,
*                    Continuous simulation parameters:
*                    IaRECper=[4](hrs),
*                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                    InterEventTime=[12](hrs)
*                    Baseflow simulation parameters:
*                    BaseFlowOption=[1] ,
*                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
*                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
ADD HYD             NHYDsum=["SN_CE"], NHYDs to add=["N_CE"+
                     +"S-1-D4"+"S-1-D5"+"MS_P2"+"P2-OVF"]
*%-----------------|-----------------------------------------------------------|
SAVE HYD            NHYD=["SN_CE"],   # OF PCYCLES=[-1],  ICASEsh=[1]
                    HYD_COMMENT=["Total Flows before Station 5737 on Jock River"]
*%-----------------|-----------------------------------------------------------|
*# Channel X-Section obtained from RVCA Hydraulic Model - Station 5737
*# JFSA 2021-02-25 add station 5737 before station 5002. Station 5737 was extracted from the HEC-RAS model T:\PROJ\1474-16\Design\20201026-QuantityControlAnalysis\HEC-RAS\JockLidar2005
*# JFSA 2021-03-02  change the slope to 0.1% instead of 0.0175 to stabilize the model
ROUTE CHANNEL       NHYDout=["5737"] ,NHYDin=["SN_CE"] ,
                    RDT=[1](min),
                    CHLGTH=[270](m),  CHSLOPE=[0.0175](%),
                                        FPSLOPE=[0.0175](%),
                    SECNUM=[1.0],       NSEG=[3]
                    ( SEGROUGH, SEGDIST (m))=
                      [0.050,-24.04
                      -0.035,23.92
                      0.050,1130.8] NSEG times
                    ( DISTANCE (m), ELEVATION (m))=
                    [-1060.52, 94 ]
                    [-268.6, 91.5 ]
                    [-259.43, 91.5 ]
                    [-179.48, 91.5 ]
                    [-67.9, 91.5 ]
                    [-59.21, 91.5 ]
                    [-33.19, 91 ]
                    [-26.08, 90.5 ]
                    [-24.04, 90 ]
                    [-13.14, 86.77 ]
                    [0, 85 ]
                    [14.68, 86.74 ]
                    [23.92, 90 ]
                    [25.78, 90.5 ]
                    [31.91, 91 ]
                    [91.95, 91.5 ]
                    [772.15, 92 ]
                    [961.49, 92.5 ]
                    [1044.69, 93 ]
                    [1130.8, 95 ]
*%-----------------|-----------------------------------------------------------|
ADD HYD             NHYDsum=["5002"], NHYDs to add=["5737"+
                     +"S-1-D1"+"S-1-D6"+"S-1-D7"]
*%-----------------|-----------------------------------------------------------|
SAVE HYD            NHYD=["5002"],   # OF PCYCLES=[-1],  ICASEsh=[1]
                    HYD_COMMENT=["Total Flows before Station 5002 on Jock River"]
*%-----------------|-----------------------------------------------------------|
*# Hydrograph from Node Cedarview Road routed to Node at West Clarke Drain
*# Channel X-Section obtained from RVCA Hydraulic Model - Station 5002
```

```
*# JFSA 2021-02-19 Change the slope from 0.01 % (as per Stantec Report 2007) to 0.0255 % so the model will be more stable and give reasonable results. It is justifiable as ROUTE CHANNELs aren't well suited to really flat slopes.
*# JFSA 2021-02-19 Change to three ROUTE CHANNEL with length 275 m each instead of one with 825 m length so the model will be more stable
*# JFSA 2021-02-26 change the length of 5002 route channel from 825 m to 736 m. That is because of adding station 5737 between station 6016 and station 5002. Then the length from station 5737 to station 5002 is 736 m. Change the slope from 0.0255 % to 0.09511 %
*
ROUTE CHANNEL        NHYDout=["N_WCa"] ,NHYDin=["5002"] ,
                     RDT=[1](min),
                     CHLGTH=[245.33333](m),  CHSLOPE=[0.09511](%),
                                         FPSLOPE=[0.09511](%),
                     SECNUM=[1.0],       NSEG=[3]
                     ( SEGROUGH, SEGDIST (m))=
                       [0.050,-37.5
                       -0.035,37.50
                       0.050,157.05] NSEG times
                     ( DISTANCE (m), ELEVATION (m))=
                     [-601.81, 91.5]
                     [-37.50, 90.00]
                     [-19.61, 87.04]
                     [0.00, 85.70]
                     [14.87, 86.93]
                     [37.50, 90.00]
                     [38.54, 90.50]
                     [42.23, 91]
                     [157.05,91.50]
*                     [161.44, 91.50]
*                     [236.48, 93.00]
*                     [385.47, 92.50]
*                     [390.78, 92.50]
*%-----------------|-------------------------------------------------------------|
ROUTE CHANNEL        NHYDout=["N_WCb"] ,NHYDin=["N_WCa"] ,
                     RDT=[1](min),
                     CHLGTH=[245.33333](m),  CHSLOPE=[0.09511](%),
                                         FPSLOPE=[0.09511](%),
                     SECNUM=[1.0],       NSEG=[3]
                     ( SEGROUGH, SEGDIST (m))=
                       [0.050,-37.5
                       -0.035,37.50
                       0.050,157.05] NSEG times
                     ( DISTANCE (m), ELEVATION (m))=
                     [-601.81, 91.5]
                     [-37.50, 90.00]
                     [-19.61, 87.04]
                     [0.00, 85.70]
                     [14.87, 86.93]
                     [37.50, 90.00]
                     [38.54, 90.50]
                     [42.23, 91]
                     [157.05,91.50]
*%-----------------|-------------------------------------------------------------|
ROUTE CHANNEL        NHYDout=["N_WC"] ,NHYDin=["N_WCb"] ,
                     RDT=[1](min),
                     CHLGTH=[245.33333](m),  CHSLOPE=[0.09511](%),
                                         FPSLOPE=[0.09511](%),
                     SECNUM=[1.0],       NSEG=[3]
                     ( SEGROUGH, SEGDIST (m))=
                       [0.050,-37.5
                       -0.035,37.50
                       0.050,157.05] NSEG times
                     ( DISTANCE (m), ELEVATION (m))=
                     [-601.81, 91.5]
                     [-37.50, 90.00]
                     [-19.61, 87.04]
```

```
                    [0.00, 85.70]
                    [14.87, 86.93]
                    [37.50, 90.00]
                    [38.54, 90.50]
                    [42.23, 91]
                    [157.05,91.50]
*#*******************************************************************************
*       -JFSA 2021-02-08 Clarke (MS_P2 and P2-OVF) and Clarke Undeveloped area (W_CLAR_UNDE) drain to Jock River at Station 5002 instead of Station 4534
*ADD HYD             NHYDsum=["SN_WC"], NHYDs to add=["MS_P2"+"P2-OVF"+"N_WC"+"W_CLAR_UNDE"]
*%-----------------|-------------------------------------------------------------|
*SAVE HYD            NHYD=["SN_WC"],   # OF PCYCLES=[-1],  ICASEsh=[1]
*                   HYD_COMMENT=["Total Flows at West Clarke Pond Outlet"]
*%-----------------|-------------------------------------------------------------|
*# Hydrograph from Node West Clarke routed to Node at Kennedy - Burnett Drain
*# Channel X-Section obtained from RVCA Hydraulic Model - Station 4534
*#
ROUTE CHANNEL       NHYDout=["N_KB"] ,NHYDin=["N_WC"] ,
                    RDT=[1](min),
                    CHLGTH=[1020](m),  CHSLOPE=[0.0498](%),
                                        FPSLOPE=[0.0498](%),
                    SECNUM=[1.0],       NSEG=[3]
                    ( SEGROUGH, SEGDIST (m))=
                      [0.050,-23.63
                      -0.035,23.63
                      0.050,728.3] NSEG times
                    ( DISTANCE (m), ELEVATION (m))=
                    [-1082.01,94]
                    [-1028.17,92.5]
                    [-992.3,93.5]
                    [-279.34,90]
                    [-23.63,90]
                    [-13.45,87.13]
                    [-0.07,86.24]
                    [10.54,87.15]
                    [23.63,90]
                    [24.86,90.5]
                    [26.72,91]
                    [45.07,91.5]
                    [128.17,91.5]
                    [270.7,92.5]
                    [728.3,95]
*%-----------------|-------------------------------------------------------------|
*#*******************************************************************************
*#    Catchment KEN_BU
*#    - To Kennedy-Burnett SWM Facility
*#    - Outlets to Fraser-Clarke drain (north of the Jock)
*#    - Medium density residential subdivision
*     - Add Kennedy Burnett model (Convert PCSWMM from NOVATECH June, 2020 to SWMHYMO)
*#*******************************************************************************
*CONTINUOUS STANDHYD NHYD=["KEN_BU"], DT=[1]min, AREA=[281](ha),
*                    XIMP=[0.55], TIMP=[0.55], DWF=[0](cms), LOSS=[2],
*                    SCS curve number CN=[71],
*                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
*                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
*                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
*                            LGI=[1369](m), MNI=[0.013], SCI=[0](min),
*                    Continuous simulation parameters:
*                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
*                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                    InterEventTime=[18](hrs),   END=-1
*%-----------------|-------------------------------------------------------------|
*#*******************************************************************************
*#   Existing Kennedy-Burnett SWM Facility
*#    - Rating curve obtained from URTKBP
```

```
*#    - Tributary Drainage Area to Pond = 160 ha
*#*******************************************************************************
*ROUTE RESERVOIR     NHYDout=["KEN_P"],  NHYDin=["KEN_BU"],
*                    RDT=[1](min),
*                          TABLE of ( OUTFLOW-STORAGE ) values
*                                      (cms) - (ha-m)
*                                    [   0.0 ,  0.0 ]
*                                    [   0.13 , 0.26]
*                                    [   0.43 , 0.56]
*                                    [   0.67 , 0.90]
*                                    [   0.86 , 1.32]
*                                    [   1.01 , 1.79]
*                                    [   1.15 , 2.33]
*                                    [   -1   ,  -1  ]  (max twenty pts)
*                          NHYDovf=["KEN-OV"]
*%-----------------|-------------------------------------------------------------|
*     -JFSA, 2021-01-19  update all KEN_BU areas based on GIS measurements
CONTINUOUS STANDHYD NHYD=["KB-01A"], DT=[1]min, AREA=[40.82](ha), XIMP=[0.097],
TIMP=[0.4], DWF=[0](cms), LOSS=[1]:
                    Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                    F=[0.00](mm),
                    Pervious   areas: IAper=[4.67](mm), SLPP=[0.5](%), LGP=[40](m),
                    MNP=[0.250], SCP=[0](min),
                    Impervious areas: IAimp=[0.785](mm), SLPI=[0.5](%),
                    LGI=[521.664](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                    END=-1
*%-----------------|-------------------------------------------------------------|
COMPUTE DUALHYD     NHYDin=["KB-01A"], CINLET=[3.6](cms), NINLET=[1],
                    MajNHYD=["KB-01A-MJ"]
                    MinNHYD=["KB-01A-MN"]
                    TMJSTO=[4995](cu-m)
*%-----------------|-------------------------------------------------------------|
ADD HYD             NHYDsum=["KB-01A-S"], NHYDs to add=["KB-01A-MJ"+"KB-01A-MN"]
*%-----------------|-------------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["KB-01B"], DT=[1]min, AREA=[31.1](ha), XIMP=[0.1875],
TIMP=[0.375], DWF=[0](cms), LOSS=[1]:
                    Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                    F=[0.00](mm),
                    Pervious   areas: IAper=[4.67](mm), SLPP=[0.42](%), LGP=[40](m),
                    MNP=[0.250], SCP=[0](min),
                    Impervious areas: IAimp=[0.785](mm), SLPI=[0.42](%),
                    LGI=[455.339](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                    END=-1
*%-----------------|-------------------------------------------------------------|
COMPUTE DUALHYD     NHYDin=["KB-01B"], CINLET=[1.585](cms), NINLET=[1],
                    MajNHYD=["KB-01B-MJ"]
                    MinNHYD=["KB-01B-MN"]
                    TMJSTO=[6075](cu-m)
*%-----------------|-------------------------------------------------------------|
ADD HYD             NHYDsum=["KB-01B-S"], NHYDs to add=["KB-01B-MJ"+"KB-01B-MN"]
*%-----------------|-------------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["KB-01C"], DT=[1]min, AREA=[13.78](ha), XIMP=[0.2045],
TIMP=[0.409], DWF=[0](cms), LOSS=[1]:
                    Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                    F=[0.00](mm),
                    Pervious   areas: IAper=[4.67](mm), SLPP=[2.0](%), LGP=[40](m),
                    MNP=[0.250], SCP=[0](min),
                    Impervious areas: IAimp=[0.785](mm), SLPI=[0.5](%),
                    LGI=[303.095](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                    END=-1
```

```
*%-----------------|-----------------------------------------------------------|
COMPUTE DUALHYD     NHYDin=["KB-01C"], CINLET=[1.35](cms), NINLET=[1],
                    MajNHYD=["KB-01C-MJ"]
                    MinNHYD=["KB-01C-MN"]
                    TMJSTO=[1880](cu-m)
*%-----------------|-----------------------------------------------------------|
ADD HYD             NHYDsum=["KB-01C-S"], NHYDs to add=["KB-01C-MJ"+"KB-01C-MN"]
*%-----------------|-----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["KB-03"], DT=[1]min, AREA=[84.78](ha), XIMP=[0.197],
TIMP=[0.394], DWF=[0](cms), LOSS=[1]:
                    Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                    F=[0.00](mm),
                    Pervious   areas: IAper=[4.67](mm), SLPP=[2.0](%), LGP=[40](m),
                    MNP=[0.250], SCP=[0](min),
                    Impervious areas: IAimp=[0.785](mm), SLPI=[0.63](%),
                    LGI=[751.798](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                    END=-1
*%-----------------|-----------------------------------------------------------|
COMPUTE DUALHYD     NHYDin=["KB-03"], CINLET=[5.27](cms), NINLET=[1],
                    MajNHYD=["KB-03-MJ"]
                    MinNHYD=["KB-03-MN"]
                    TMJSTO=[15500](cu-m)
*%-----------------|-----------------------------------------------------------|
ADD HYD             NHYDsum=["KB-03-S"], NHYDs to add=["KB-03-MJ"+"KB-03-MN"]
*%-----------------|-----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["KB-04"], DT=[1]min, AREA=[6.95](ha), XIMP=[0.85],
TIMP=[0.85], DWF=[0](cms), LOSS=[1]:
                    Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                    F=[0.00](mm),
                    Pervious   areas: IAper=[4.67](mm), SLPP=[2.0](%), LGP=[40](m),
                    MNP=[0.250], SCP=[0](min),
                    Impervious areas: IAimp=[0.942](mm), SLPI=[0.5](%),
                    LGI=[215.252](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                    END=-1
*%-----------------|-----------------------------------------------------------|
COMPUTE DUALHYD     NHYDin=["KB-04"], CINLET=[0.503](cms), NINLET=[1],
                    MajNHYD=["KB-04-MJ"]
                    MinNHYD=["KB-04-MN"]
                    TMJSTO=[1972](cu-m)
*%-----------------|-----------------------------------------------------------|
ADD HYD             NHYDsum=["KB-04-S"], NHYDs to add=["KB-04-MJ"+"KB-04-MN"]
*%-----------------|-----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["KB-05"], DT=[1]min, AREA=[5.19](ha), XIMP=[0.93],
TIMP=[0.93], DWF=[0](cms), LOSS=[1]:
                    Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                    F=[0.00](mm),
                    Pervious   areas: IAper=[4.67](mm), SLPP=[2.0](%), LGP=[40](m),
                    MNP=[0.250], SCP=[0](min),
                    Impervious areas: IAimp=[1.57](mm), SLPI=[0.5](%),
                    LGI=[186.011](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                    END=-1
*%-----------------|-----------------------------------------------------------|
*%-----------------|-----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["KB-06"], DT=[1]min, AREA=[12.93](ha), XIMP=[0.873],
TIMP=[0.873], DWF=[0](cms), LOSS=[1]:
                    Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                    F=[0.00](mm),
                    Pervious   areas: IAper=[4.67](mm), SLPP=[2.0](%), LGP=[40](m),
                    MNP=[0.250], SCP=[0](min),
                    Impervious areas: IAimp=[0.942](mm), SLPI=[4.75](%),
```

```
                        LGI=[293.598](m), MNI=[0.013], SCI=[0](min),
                        Continuous simulation parameters:
                        IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                        END=-1
*%-----------------|-----------------------------------------------------------|
COMPUTE DUALHYD         NHYDin=["KB-06"], CINLET=[2.262](cms), NINLET=[1],
                        MajNHYD=["KB-06-MJ"]
                        MinNHYD=["KB-06-MN"]
                        TMJSTO=[1950](cu-m)
*%-----------------|-----------------------------------------------------------|
ADD HYD                 NHYDsum=["KB-06-S"], NHYDs to add=["KB-06-MJ"+"KB-06-MN"]
*%-----------------|-----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["KB-11"], DT=[1]min, AREA=[4.03](ha), XIMP=[0.675],
TIMP=[0.675], DWF=[0](cms), LOSS=[1]:
                        Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                        F=[0.00](mm),
                        Pervious   areas: IAper=[4.67](mm), SLPP=[2.0](%), LGP=[40](m),
                        MNP=[0.250], SCP=[0](min),
                        Impervious areas: IAimp=[0.785](mm), SLPI=[2.0](%),
                        LGI=[163.911](m), MNI=[0.013], SCI=[0](min),
                        Continuous simulation parameters:
                        IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                        END=-1
*%-----------------|-----------------------------------------------------------|
COMPUTE DUALHYD         NHYDin=["KB-11"], CINLET=[0.5773](cms), NINLET=[1],
                        MajNHYD=["KB-11-MJ"]
                        MinNHYD=["KB-11-MN"]
                        TMJSTO=[597](cu-m)
*%-----------------|-----------------------------------------------------------|
ADD HYD                 NHYDsum=["KB-11-S"], NHYDs to add=["KB-11-MJ"+"KB-11-MN"]
*%-----------------|-----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["S1"], DT=[1]min, AREA=[4.99](ha), XIMP=[0.93], TIMP=[0.93],
DWF=[0](cms), LOSS=[1]:
                        Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                        F=[0.00](mm),
                        Pervious   areas: IAper=[4.67](mm), SLPP=[2.0](%), LGP=[40](m),
                        MNP=[0.250], SCP=[0](min),
                        Impervious areas: IAimp=[1.57](mm), SLPI=[2.0](%),
                        LGI=[182.392](m), MNI=[0.013], SCI=[0](min),
                        Continuous simulation parameters:
                        IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                        END=-1
*%-----------------|-----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["KB-15"], DT=[1]min, AREA=[2.15](ha), XIMP=[0.79],
TIMP=[0.79], DWF=[0](cms), LOSS=[1]:
                        Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                        F=[0.00](mm),
                        Pervious   areas: IAper=[4.67](mm), SLPP=[2.0](%), LGP=[40](m),
                        MNP=[0.250], SCP=[0](min),
                        Impervious areas: IAimp=[0.157](mm), SLPI=[0.3](%),
                        LGI=[119.722](m), MNI=[0.013], SCI=[0](min),
                        Continuous simulation parameters:
                        IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                        END=-1
*%-----------------|-----------------------------------------------------------|
*%-----------------|-----------------------------------------------------------|
ADD HYD                 NHYDsum=["KB-P1"], NHYDs to
add=["KB-01A-S"+"KB-01B-S"+"KB-01C-S"+"KB-03-S"+"KB-04-S"+"KB-05"+"KB-06-S"+"KB-11-S"+"KB
-15"+"S1"]
*%-----------------|-----------------------------------------------------------|
ROUTE RESERVOIR         NHYDout=["KB-P1R"],  NHYDin=["KB-P1"],
                        RDT=[1](min),
                              TABLE of ( OUTFLOW-STORAGE ) values
                                          (cms) - (ha-m)
                                        [   0.0 ,  0.0 ]
                                        [0.076,0.003]
```

```
                                       [0.088,0.006]
                                       [0.136,0.011]
                                       [0.301,0.017]
                                       [0.454,0.027]
                                       [0.631,0.041]
                                       [1.173,0.068]
                                       [1.91,0.111]
                                       [4.847,0.231]
                                       [9.813,0.436]
                                       [12.134,0.617]
                                       [12.438,0.732]
                                       [12.424,0.811]
                                       [12.425,0.894]
                                       [   -1  ,  -1  ]  (max twenty pts)
                             NHYDovf=["KB-P1ovf"]
*%-----------------|------------------------------------------------------------|
ADD HYD             NHYDsum=["KB-Pond1"], NHYDs to add=["KB-P1R"+"KB-P1ovf"]
*%-----------------|------------------------------------------------------------|
SAVE HYD            NHYD=["KB-Pond1"],   # OF PCYCLES=[-1],  ICASEsh=[1]
                    HYD_COMMENT=["Total Flows at KB first pond"]
*%-----------------|------------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["KB-07"], DT=[1]min, AREA=[10.86](ha), XIMP=[0.86],
TIMP=[0.86], DWF=[0](cms), LOSS=[1]:
                    Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                    F=[0.00](mm),
                    Pervious   areas: IAper=[4.67](mm), SLPP=[2.0](%), LGP=[40](m),
                    MNP=[0.250], SCP=[0](min),
                    Impervious areas: IAimp=[0.785](mm), SLPI=[2.0](%),
                    LGI=[269.072](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                    END=-1
*%-----------------|------------------------------------------------------------|
COMPUTE DUALHYD     NHYDin=["KB-07"], CINLET=[2.094](cms), NINLET=[1],
                    MajNHYD=["KB-07-MJ"]
                    MinNHYD=["KB-07-MN"]
                    TMJSTO=[1378](cu-m)
*%-----------------|------------------------------------------------------------|
ADD HYD             NHYDsum=["KB-07-S"], NHYDs to add=["KB-07-MJ"+"KB-07-MN"]
*%-----------------|------------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["KB-08"], DT=[1]min, AREA=[6.61](ha), XIMP=[0.64],
TIMP=[0.64], DWF=[0](cms), LOSS=[1]:
                    Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                    F=[0.00](mm),
                    Pervious   areas: IAper=[4.67](mm), SLPP=[2.0](%), LGP=[40](m),
                    MNP=[0.250], SCP=[0](min),
                    Impervious areas: IAimp=[0.785](mm), SLPI=[2.0](%),
                    LGI=[209.921](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                    END=-1
*%-----------------|------------------------------------------------------------|
COMPUTE DUALHYD     NHYDin=["KB-08"], CINLET=[1.058](cms), NINLET=[1],
                    MajNHYD=["KB-08-MJ"]
                    MinNHYD=["KB-08-MN"]
                    TMJSTO=[787](cu-m)
*%-----------------|------------------------------------------------------------|
ADD HYD             NHYDsum=["KB-08-S"], NHYDs to add=["KB-08-MJ"+"KB-08-MN"]
*%-----------------|------------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["KB-09"], DT=[1]min, AREA=[2.6](ha), XIMP=[0.86],
TIMP=[0.86], DWF=[0](cms), LOSS=[1]:
                    Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                    F=[0.00](mm),
                    Pervious   areas: IAper=[4.67](mm), SLPP=[2.0](%), LGP=[40](m),
                    MNP=[0.250], SCP=[0](min),
                    Impervious areas: IAimp=[1.57](mm), SLPI=[2.0](%),
```

```
                    LGI=[131.656](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                    END=-1
*%-----------------|-----------------------------------------------------------|
*%-----------------|-----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["KB-10_1"], DT=[1]min, AREA=[2.37](ha),  XIMP=[0.86],
TIMP=[0.86], DWF=[0](cms), LOSS=[1]:
                    Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                    F=[0.00](mm),
                    Pervious   areas: IAper=[4.67](mm), SLPP=[2.0](%), LGP=[40](m),
                    MNP=[0.250], SCP=[0](min),
                    Impervious areas: IAimp=[1.57](mm), SLPI=[2.0](%),
                    LGI=[125.698](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                    END=-1
*%-----------------|-----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["KB-10_2"], DT=[1]min, AREA=[1.14](ha), XIMP=[0.86],
TIMP=[0.86], DWF=[0](cms), LOSS=[1]:
                    Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                    F=[0.00](mm),
                    Pervious   areas: IAper=[4.67](mm), SLPP=[2.0](%), LGP=[40](m),
                    MNP=[0.250], SCP=[0](min),
                    Impervious areas: IAimp=[1.57](mm), SLPI=[2.0](%), LGI=[87.178](m),
                    MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                    END=-1
*%-----------------|-----------------------------------------------------------|
*%-----------------|-----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["KB-12"], DT=[1]min, AREA=[4.86](ha), XIMP=[0.79],
TIMP=[0.79], DWF=[0](cms), LOSS=[1]:
                    Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                    F=[0.00](mm),
                    Pervious   areas: IAper=[4.67](mm), SLPP=[2.0](%), LGP=[40](m),
                    MNP=[0.250], SCP=[0](min),
                    Impervious areas: IAimp=[1.099](mm), SLPI=[2.0](%),
                    LGI=[180.000](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                    END=-1
*%-----------------|-----------------------------------------------------------|
COMPUTE DUALHYD     NHYDin=["KB-12"], CINLET=[0.8665](cms), NINLET=[1],
                    MajNHYD=["KB-12-MJ"]
                    MinNHYD=["KB-12-MN"]
                    TMJSTO=[632](cu-m)
*%-----------------|-----------------------------------------------------------|
ADD HYD             NHYDsum=["KB-12-S"], NHYDs to add=["KB-12-MJ"+"KB-12-MN"]
*%-----------------|-----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["KB-13"], DT=[1]min, AREA=[10.19](ha), XIMP=[0.64],
TIMP=[0.64], DWF=[0](cms), LOSS=[1]:
                    Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                    F=[0.00](mm),
                    Pervious   areas: IAper=[4.67](mm), SLPP=[2.0](%), LGP=[40](m),
                    MNP=[0.250], SCP=[0](min),
                    Impervious areas: IAimp=[0.785](mm), SLPI=[2.0](%),
                    LGI=[260.640](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                    END=-1
*%-----------------|-----------------------------------------------------------|
COMPUTE DUALHYD     NHYDin=["KB-13"], CINLET=[1.722](cms), NINLET=[1],
                    MajNHYD=["KB-13-MJ"]
                    MinNHYD=["KB-13-MN"]
                    TMJSTO=[1077](cu-m)
```

```
*%-----------------|-----------------------------------------------------------|
ADD HYD             NHYDsum=["KB-13-S"], NHYDs to add=["KB-13-MJ"+"KB-13-MN"]
*%-----------------|-----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["KB-14"], DT=[1]min, AREA=[5.47](ha), XIMP=[0.64],
TIMP=[0.64], DWF=[0](cms), LOSS=[1]:
                    Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                    F=[0.00](mm),
                    Pervious   areas: IAper=[4.67](mm), SLPP=[2.0](%), LGP=[40](m),
                    MNP=[0.250], SCP=[0](min),
                    Impervious areas: IAimp=[0.785](mm), SLPI=[2.0](%),
                    LGI=[190.962](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                    END=-1
*%-----------------|-----------------------------------------------------------|
COMPUTE DUALHYD     NHYDin=["KB-14"], CINLET=[0.8734](cms), NINLET=[1],
                    MajNHYD=["KB-14-MJ"]
                    MinNHYD=["KB-14-MN"]
                    TMJSTO=[631](cu-m)
*%-----------------|-----------------------------------------------------------|
ADD HYD             NHYDsum=["KB-14-S"], NHYDs to add=["KB-14-MJ"+"KB-14-MN"]
*%-----------------|-----------------------------------------------------------|
*%-----------------|-----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["KB-16_2"], DT=[1]min, AREA=[3.42](ha), XIMP=[0.71],
TIMP=[0.71], DWF=[0](cms), LOSS=[1]:
                    Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                    F=[0.00](mm),
                    Pervious   areas: IAper=[4.67](mm), SLPP=[2.0](%), LGP=[40](m),
                    MNP=[0.250], SCP=[0](min),
                    Impervious areas: IAimp=[0.157](mm), SLPI=[0.3](%),
                    LGI=[150.997](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                    END=-1
*%-----------------|-----------------------------------------------------------|
ADD HYD             NHYDsum=["KB-P2"], NHYDs to
add=["KB-Pond1"+"KB-07-S"+"KB-08-S"+"KB-09"+"KB-10_1"+"KB-10_2"+"KB-12-S"+"KB-13-S"+"KB-1
4-S"+"KB-16_2"]
*%-----------------|-----------------------------------------------------------|
ROUTE RESERVOIR     NHYDout=["KB-P2R"],  NHYDin=["KB-P2"],
                    RDT=[1](min),
                          TABLE of ( OUTFLOW-STORAGE ) values
                                      (cms) - (ha-m)
                                    [   0.0 ,  0.0 ]
                                    [0.053,0.005]
                                    [0.132,0.009]
                                    [0.269,0.014]
                                    [0.455,0.023]
                                    [0.699,0.037]
                                    [0.947,0.056]
                                    [1.853,0.09]
                                    [2.712,0.146]
                                    [6.626,0.287]
                                    [11.228,0.515]
                                    [14.885,0.738]
                                    [16.473,0.893]
                                    [17.311,0.998]
                                    [17.633,1.063]
                                    [17.634,1.112]
                                    [   -1  ,  -1  ]  (max twenty pts)
                          NHYDovf=["KB-P2ovf"]
*%-----------------|-----------------------------------------------------------|
ADD HYD             NHYDsum=["KB-Pond2"], NHYDs to add=["KB-P2R"+"KB-P2ovf"]
*%-----------------|-----------------------------------------------------------|
SAVE HYD            NHYD=["KB-Pond2"],   # OF PCYCLES=[-1],  ICASEsh=[1]
                    HYD_COMMENT=["Total Flows at KB second pond"]
```

```
*%-----------------|-----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["KB-16_1"], DT=[1]min, AREA=[2.8](ha), XIMP=[0.75], TIMP=[0.75], DWF=[0](cms), LOSS=[1]:
                    Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr), F=[0.00](mm),
                    Pervious   areas: IAper=[4.67](mm), SLPP=[2.0](%), LGP=[40](m), MNP=[0.250], SCP=[0](min),
                    Impervious areas: IAimp=[0.157](mm), SLPI=[0.3](%), LGI=[136.626](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs), END=-1
*%-----------------|-----------------------------------------------------------|
ADD HYD             NHYDsum=["KB-P3"], NHYDs to add=["KB-Pond2"+"KB-16_1"]
*%-----------------|-----------------------------------------------------------|
*%-----------------|-----------------------------------------------------------|
* One inflow node from pond 3 is added to the model (ROUTE RESERVOIR)
* Another inflow node from right side of pond 3 is not added to the model
ROUTE RESERVOIR     NHYDout=["KB-P3R"],  NHYDin=["KB-P3"],
                    RDT=[1](min),
                          TABLE of ( OUTFLOW-STORAGE ) values
                                      (cms) - (ha-m)
                                    [   0.0 ,  0.0 ]
                                    [0.051,0.002]
                                    [0.048,0.003]
                                    [0.057,0.029]
                                    [0.089,0.045]
                                    [0.133,0.069]
                                    [0.199,0.106]
                                    [0.321,0.172]
                                    [1.029,0.306]
                                    [4.036,0.527]
                                    [8.332,0.761]
                                    [11.727,0.941]
                                    [14.125,1.067]
                                    [15.675,1.149]
                                    [16.555,1.196]
                                    [16.911,1.214]
                                    [   -1  ,  -1  ]   (max twenty pts)
                          NHYDovf=["KB-P3ovf"]
*%-----------------|-----------------------------------------------------------|
ADD HYD             NHYDsum=["KB-Pond3"], NHYDs to add=["KB-P3R"+"KB-P3ovf"]
*%-----------------|-----------------------------------------------------------|
SAVE HYD            NHYD=["KB-Pond3"],   # OF PCYCLES=[-1],  ICASEsh=[1]
                    HYD_COMMENT=["Total Flows at KB third pond"]
*%-----------------|-----------------------------------------------------------|
*#*****************************************************************************
*#    EXISTING / PROPOSED Subcatchments (Kennedy-Burnett SWM Facility (118080), SWM Modeling Approach, NOVATECH Report June, 2020)
*#    - TO FRASER-CLARKE DRAIN
*#*****************************************************************************
CONTINUOUS STANDHYD NHYD=["FC-01"], DT=[1]min, AREA=[8.03](ha), XIMP=[0.47], TIMP=[0.47], DWF=[0](cms), LOSS=[1]:
                    Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr), F=[0.00](mm),
                    Pervious   areas: IAper=[4.67](mm), SLPP=[2.0](%), LGP=[40](m), MNP=[0.250], SCP=[0](min),
                    Impervious areas: IAimp=[1.57](mm), SLPI=[1.0](%), LGI=[231.373](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs), END=-1
*%-----------------|-----------------------------------------------------------|
COMPUTE DUALHYD     NHYDin=["FC-01"], CINLET=[0.756](cms), NINLET=[1],
                    MajNHYD=["FC-01-MJ"]
                    MinNHYD=["FC-01-MN"]
```

```
                    TMJSTO=[714](cu-m)
*%-----------------|-----------------------------------------------------------|
ADD HYD             NHYDsum=["FC-01-S"], NHYDs to add=["FC-01-MJ"+"FC-01-MN"]
*%-----------------|-----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["FC-02"], DT=[1]min, AREA=[16.05](ha), XIMP=[0.93],
TIMP=[0.93], DWF=[0](cms), LOSS=[1]:
                    Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                    F=[0.00](mm),
                    Pervious   areas: IAper=[4.67](mm), SLPP=[2.0](%), LGP=[40](m),
                    MNP=[0.250], SCP=[0](min),
                    Impervious areas: IAimp=[1.57](mm), SLPI=[1.0](%),
                    LGI=[327.109](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                    END=-1
*%-----------------|-----------------------------------------------------------|
COMPUTE DUALHYD     NHYDin=["FC-02"], CINLET=[1.159](cms), NINLET=[1],
                    MajNHYD=["FC-02-MJ"]
                    MinNHYD=["FC-02-MN"]
                    TMJSTO=[2385](cu-m)
*%-----------------|-----------------------------------------------------------|
ADD HYD             NHYDsum=["FC-02-S"], NHYDs to add=["FC-02-MJ"+"FC-02-MN"]
*%-----------------|-----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["FC-03"], DT=[1]min, AREA=[7.37](ha), XIMP=[0.64],
TIMP=[0.64], DWF=[0](cms), LOSS=[1]:
                    Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                    F=[0.00](mm),
                    Pervious   areas: IAper=[4.67](mm), SLPP=[2.0](%), LGP=[40](m),
                    MNP=[0.250], SCP=[0](min),
                    Impervious areas: IAimp=[1.57](mm), SLPI=[1.0](%),
                    LGI=[221.660](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                    END=-1
*%-----------------|-----------------------------------------------------------|
COMPUTE DUALHYD     NHYDin=["FC-03"], CINLET=[0.358](cms), NINLET=[1],
                    MajNHYD=["FC-03-MJ"]
                    MinNHYD=["FC-03-MN"]
                    TMJSTO=[1131](cu-m)
*%-----------------|-----------------------------------------------------------|
ADD HYD             NHYDsum=["FC-03-S"], NHYDs to add=["FC-03-MJ"+"FC-03-MN"]
*%-----------------|-----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["FC-04"], DT=[1]min, AREA=[12.87](ha), XIMP=[0.64],
TIMP=[0.64], DWF=[0](cms), LOSS=[1]:
                    Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                    F=[0.00](mm),
                    Pervious   areas: IAper=[4.67](mm), SLPP=[2.0](%), LGP=[40](m),
                    MNP=[0.250], SCP=[0](min),
                    Impervious areas: IAimp=[1.57](mm), SLPI=[1.0](%),
                    LGI=[292.916](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                    END=-1
*%-----------------|-----------------------------------------------------------|
COMPUTE DUALHYD     NHYDin=["FC-04"], CINLET=[0.741](cms), NINLET=[1],
                    MajNHYD=["FC-04-MJ"]
                    MinNHYD=["FC-04-MN"]
                    TMJSTO=[1794](cu-m)
*%-----------------|-----------------------------------------------------------|
ADD HYD             NHYDsum=["FC-04-S"], NHYDs to add=["FC-04-MJ"+"FC-04-MN"]
*%-----------------|-----------------------------------------------------------|
*#******************************************************************************
*#    PROPOSED Subcatchments (Kennedy-Burnett SWM Facility (118080), SWM Modeling
Approach, NOVATECH Report June, 2020)
*#    - TO JOCK RIVER
*#******************************************************************************
```

```
CONTINUOUS STANDHYD NHYD=["JR-01"], DT=[1]min, AREA=[8.24](ha), XIMP=[0.64],
TIMP=[0.64], DWF=[0](cms), LOSS=[1]:
                    Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                    F=[0.00](mm),
                    Pervious   areas: IAper=[4.67](mm), SLPP=[2.0](%), LGP=[40](m),
                    MNP=[0.250], SCP=[0](min),
                    Impervious areas: IAimp=[1.57](mm), SLPI=[1.0](%),
                    LGI=[234.379](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                    END=-1
*%-----------------|-----------------------------------------------------------|
COMPUTE DUALHYD     NHYDin=["JR-01"], CINLET=[0.563](cms), NINLET=[1],
                    MajNHYD=["JR-01-MJ"]
                    MinNHYD=["JR-01-MN"]
                    TMJSTO=[1040](cu-m)
*%-----------------|-----------------------------------------------------------|
ADD HYD             NHYDsum=["JR-01-S"], NHYDs to add=["JR-01-MJ"+"JR-01-MN"]
*%-----------------|-----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["JR-02"], DT=[1]min, AREA=[1.59](ha), XIMP=[0.64],
TIMP=[0.64], DWF=[0](cms), LOSS=[1]:
                    Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                    F=[0.00](mm),
                    Pervious   areas: IAper=[4.67](mm), SLPP=[2.0](%), LGP=[40](m),
                    MNP=[0.250], SCP=[0](min),
                    Impervious areas: IAimp=[1.57](mm), SLPI=[1.0](%),
                    LGI=[102.956](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                    END=-1
*%-----------------|-----------------------------------------------------------|
COMPUTE DUALHYD     NHYDin=["JR-02"], CINLET=[0.153](cms), NINLET=[1],
                    MajNHYD=["JR-02-MJ"]
                    MinNHYD=["JR-02-MN"]
                    TMJSTO=[153](cu-m)
*%-----------------|-----------------------------------------------------------|
ADD HYD             NHYDsum=["JR-02-S"], NHYDs to add=["JR-02-MJ"+"JR-02-MN"]
*%-----------------|-----------------------------------------------------------|
*#****************************************************************************
*#    Catchment FRASER
*#    - To Fraser-Clarke drain (north of the Jock)
*#    - Developed land with assumed 43% imp.
*#    - 2020-12-17 Change Fraser area to be 35.1 as measured from QGIS
*#    - 2020-12-17 All Fraser is undeveloped (Nashyd)
*#****************************************************************************
CONTINUOUS NASHYD   NHYD=["FRASER-DRN"], DT=[1]min, AREA=[13.65](ha),
                    DWF=[0](cms), CN/C=[77],  IA=[4.67](mm),
                    N=[3], TP=[0.4258]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
*CONTINUOUS STANDHYD NHYD=["FRASER-D"], DT=[1]min, AREA=[21.61](ha),
*                    XIMP=[0.585], TIMP=[0.585], DWF=[0](cms), LOSS=[2],
*                    SCS curve number CN=[80],
*                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
*                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
*                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
*                            LGI=[379.561](m), MNI=[0.013], SCI=[0](min),
*                    Continuous simulation parameters:
*                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
```

```
*                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                    InterEventTime=[18](hrs),   END=-1
*%-----------------|-----------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["FRASER-D"], DT=[1]min, AREA=[21.61](ha),
                    DWF=[0](cms), CN/C=[77],  IA=[4.67](mm),
                    N=[3], TP=[0.674]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
*COMPUTE DUALHYD     NHYDin=["FRASER-D"], CINLET=[3.545](cms), NINLET=[1],
*                    MajNHYD=["FRASER-J"]
*                    MinNHYD=["FRASER-N"]
*                    TMJSTO=[9999999](cu-m)
*%-----------------|-----------------------------------------------------------|
*ADD HYD             NHYDsum=["FRASER-S"], NHYDs to add=["FRASER-J"+"FRASER-N"]
*%-----------------|-----------------------------------------------------------|
*ROUTE RESERVOIR     NHYDout=["MS_P20"],  NHYDin=["FRASER"],
*                    RDT=[1](min),
*                          TABLE of ( OUTFLOW-STORAGE ) values
*                                      (cms) - (ha-m)
*                                    [   0.0 ,  0.0 ]
*                                    [   0.04 , 0.36]
*                                    [   -1  ,  -1  ]  (max twenty pts)
*                          NHYDovf=["P20-OVF"]
*%-----------------|-----------------------------------------------------------|
ADD HYD             NHYDsum=["4241"], NHYDs to
add=["KB-Pond3"+"S-1-B"+"FRASER-DRN"+"FRASER-D"+"N_KB"+"FC-01-S"+"FC-02-S"+"FC-03-S"]
*%-----------------|-----------------------------------------------------------|
SAVE HYD            NHYD=["4241"],   # OF PCYCLES=[-1],  ICASEsh=[1]
                    HYD_COMMENT=["Total Flows at Ken-Burnett Outlet"]
*%-----------------|-----------------------------------------------------------|
*# Hydrograph from Node Ken-Burnett to station 3633
*# Channel X-Section obtained from RVCA Hydraulic Model - Station 4241
*#
ROUTE CHANNEL       NHYDout=["4241-out"], NHYDin=["4241"],  RDT=[1](min),
                    CHLGTH=[294](m),  CHSLOPE=[0.1088](%), FPSLOPE=[0.1088](%),
                    SECNUM=[1.0],       NSEG=[3]
                    ( SEGROUGH, SEGDIST (m))=[0.05, -20.12
                                             -0.035, 45.26
                                              0.05, 403.84] NSEG times
                    ( DISTANCE (m), ELEVATION (m))=[]
                    [-909.72, 95 ]
                    [-907.09, 94.5 ]
                    [-904.65, 94 ]
                    [-902.26, 93.5 ]
                    [-44.51, 91.5 ]
                    [-25.1, 91.5 ]
                    [-20.98, 91 ]
                    [-20.61, 90.5 ]
                    [-20.12, 90 ]
                    [-6.13, 87.26 ]
                    [17.51, 86.56 ]
                    [31.37, 87.2 ]
                    [45.26, 90 ]
                    [50.41, 90.5 ]
                    [63.06, 91 ]
                    [134.5, 91.5 ]
                    [190.63, 92 ]
                    [251.98, 92.5 ]
                    [321.32, 93.5 ]
```

```
                    [403.84, 95 ]
*%-----------------|-----------------------------------------------------------|
ADD HYD             NHYDsum=["SN_KB"], NHYDs to add=["4241-out"+"FC-04-S"+"JR-01-S"+"JR-02-S"]
*%-----------------|-----------------------------------------------------------|
SAVE HYD            NHYD=["SN_KB"],   # OF PCYCLES=[-1],  ICASEsh=[1]
                    HYD_COMMENT=["Total Flows before Station 3633]
*%-----------------|-----------------------------------------------------------|
*# Hydrograph from Station 3633 to Node Todd
*# Channel X-Section obtained from RVCA Hydraulic Model - Station 3633
*# JFSA 2021-02-26 change the channel length (at station 3633) from 650m to 608m and change the slope from 0.0498% to 0.24671%. That is because of adding station 4241 between station 4534 and  station 3633
*#
ROUTE CHANNEL       NHYDout=["N_TO"], NHYDin=["SN_KB"],  RDT=[1](min),
                    CHLGTH=[608](m),  CHSLOPE=[0.24671](%), FPSLOPE=[0.24671](%),
                    SECNUM=[1.0],       NSEG=[3]
                    ( SEGROUGH, SEGDIST (m))=[0.05, -23.74
                                             -0.035, 23.74
                                              0.05, 26.50] NSEG times
                    ( DISTANCE (m), ELEVATION (m))=[]
                    -29.24, 91.0
                    -27.41, 90.5
                    -25.64, 90
                    -23.74, 89.5
                    -22, 89.26
                    -20, 88.51
                    -19, 88.32
                    -15, 88.1
                    -10, 88.11
                    -5, 88.17
                    0, 88.27
                    5, 88.19
                    10, 88.06
                    15, 88.48
                    16, 88.7
                    23.74, 89.5
                    24.68, 90
                    25.57, 90.5
                    26.50, 91.0
*                                         [-29.24, 91]
*                                         [-27.41, 90.5]
*                                         [-25.64, 90]
*                                         [-23.74, 89.5]
*                                         [-22, 89. 26]
*                                         [-20, 88.51]
*                                         [-19, 88.32]
*                                         [-15, 88.1]
*                                         [-10, 88.11]
*                                         [-5, 88.17]
*                                         [0, 88.27]
*                                         [5, 88.19]
*                                         [10, 88.06]
*                                         [15, 88.48]
*                                         [16, 88.7]
*                                         [23.74, 89.5]
*                                         [24.68, 90]
*                                         [25.57, 90.5]
*%-----------------|-----------------------------------------------------------|
*#**************************************************************************
*#    Catchment Greenbank
*#    - To Greenbank Drain (south of the Jock)
*#    - JFSA 2021-01-18 add Greenbank pond as per JFSA, P598(06)-15, June 2016
*#    - JFSA 2021-01-19 update area from 37.479 ha to 36.6 ha based on GIS measurements
*#**************************************************************************
CONTINUOUS STANDHYD NHYD=["Greenbank"], DT=[1]min, AREA=[36.6](ha),
```

```
                    XIMP=[0.639], TIMP=[0.682], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[77],
                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
                            LGI=[493.96](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[18](hrs),   END=-1
*%-----------------|------------------------------------------------------------|
ROUTE RESERVOIR     NHYDout=["GreenB_MN"] ,NHYDin=["Greenbank"] ,
                    RDT=[1](min),
                          TABLE of ( OUTFLOW-STORAGE ) values
                                      (cms) - (ha-m)
                                    [    0.0 , 0.0    ]
                                    [ 0.033 , 0.084 ]
                                    [ 0.039 , 0.201 ]
                                    [ 0.113 , 0.292 ]
                                    [ 0.237 , 0.386 ]
                                    [ 0.382 , 0.484 ]
                                    [ 0.539 , 0.585 ]
                                    [ 0.7 , 0.692 ]
                                    [ 0.86 , 0.804 ]
                                    [ 4.684 , 0.922 ]
                                    [ 11.539 , 1.052 ]
                                    [ 20.867 , 1.168 ]
                                    [ 103.616 , 1.974 ]
                                    [    -1  ,  -1    ]  (max twenty pts)
                          NHYDovf=["GreenB_MJ"] ,
*%-----------------|------------------------------------------------------------|
*%-----------------|------------------------------------------------------------|
ADD HYD             NHYDsum=["GreenB"], NHYDs to add=["N_TO"+"GreenB_MJ"+"GreenB_MN"]
*%-----------------|------------------------------------------------------------|
SAVE HYD            NHYD=["GreenB"],   # OF PCYCLES=[-1],  ICASEsh=[1]
                    HYD_COMMENT=["Total Flows at Greenbank Drain"]
*%-----------------|------------------------------------------------------------|
*#******************************************************************************
*#    Catchment TODD
*#    - To Todd Drain (south of the Jock)
*#    - Subdivision with 43% imp. as per Barrhaven South MSS
*#    - 2020-11-30 increase imp. based on P598(04)-11
*#    - 2020-11-30 update TODD Tributary Drainage Area to  = 146.015 ha based on P598(04)-11
*#    - 2020-11-30 split TODD Drainage Area to MAJOR, MINOR, POND and ALL
*#******************************************************************************
*#    - JFSA 2021-01-19 add "TODD_MN1" as part of Clarke("W_CLAR_MJ") and remove it from Todd
*CONTINUOUS STANDHYD NHYD=["TODD_MN1"], DT=[1]min, AREA=[1.772](ha),
*                    XIMP=[0.53], TIMP=[0.57], DWF=[0](cms), LOSS=[2],
*                    SCS curve number CN=[77],
*                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
*                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
*                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
*                            LGI=[108.689](m), MNI=[0.013], SCI=[0](min),
*                    Continuous simulation parameters:
*                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
*                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                    InterEventTime=[18](hrs),   END=-1
*%-----------------|------------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["TODD_MN2"], DT=[1]min, AREA=[2.1](ha),
                    XIMP=[0.53], TIMP=[0.57], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[77],
                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
```

```
                              LGI=[118.322](m), MNI=[0.013], SCI=[0](min),
                      Continuous simulation parameters:
                      IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                      SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                      InterEventTime=[18](hrs),   END=-1
*%-----------------|------------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["TODD_MN3"], DT=[1]min, AREA=[0.117](ha),
                      XIMP=[0.53], TIMP=[0.57], DWF=[0](cms), LOSS=[2],
                      SCS curve number CN=[77],
                      Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                              LGP=[40](m), MNP=[0.25], SCP=[0](min),
                      Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
                              LGI=[27.928](m), MNI=[0.013], SCI=[0](min),
                      Continuous simulation parameters:
                      IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                      SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                      InterEventTime=[18](hrs),   END=-1
*%-----------------|------------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["TODD_MJ"], DT=[1]min, AREA=[30.230](ha),
                      XIMP=[0.52], TIMP=[0.64], DWF=[0](cms), LOSS=[2],
                      SCS curve number CN=[77],
                      Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                              LGP=[40](m), MNP=[0.25], SCP=[0](min),
                      Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
                              LGI=[448.925](m), MNI=[0.013], SCI=[0](min),
                      Continuous simulation parameters:
                      IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                      SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                      InterEventTime=[18](hrs),   END=-1
*%-----------------|------------------------------------------------------------|
*     -JFSA, 2021-01-19  update "TODD_ALL" area from 108.741 ha to 112.908 ha based on GIS measurements (148.41-30.23-0.117-2.1-3.055=112.908 ha)
CONTINUOUS STANDHYD NHYD=["TODD_ALL"], DT=[1]min, AREA=[112.908](ha),
                      XIMP=[0.52], TIMP=[0.57], DWF=[0](cms), LOSS=[2],
                      SCS curve number CN=[77],
                      Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                              LGP=[40](m), MNP=[0.25], SCP=[0](min),
                      Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
                              LGI=[867.594](m), MNI=[0.013], SCI=[0](min),
                      Continuous simulation parameters:
                      IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                      SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                      InterEventTime=[18](hrs),   END=-1
*%-----------------|------------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["TODD_P"], DT=[1]min, AREA=[3.055](ha),
                      XIMP=[0.63], TIMP=[0.63], DWF=[0](cms), LOSS=[2],
                      SCS curve number CN=[77],
                      Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                              LGP=[40](m), MNP=[0.25], SCP=[0](min),
                      Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
                              LGI=[142.712](m), MNI=[0.013], SCI=[0](min),
                      Continuous simulation parameters:
                      IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                      SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                      InterEventTime=[18](hrs),   END=-1
*%-----------------|------------------------------------------------------------|
*%-----------------|------------------------------------------------------------|
*    -JFSA 2021-02-23 "TODD_DEVL" is part of the Corrigan sub-catchment because it drains to Corrigan SWM as per geoOttawa.ca Feb. 2021. "TODD_DEVL" now is called "corr1" and its parameters remain the same.
*CONTINUOUS STANDHYD NHYD=["TODD_DEVL"], DT=[1]min, AREA=[15.87](ha),
*                     XIMP=[0.63], TIMP=[0.63], DWF=[0](cms), LOSS=[2],
*                     SCS curve number CN=[77],
*                     Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
*                             LGP=[40](m), MNP=[0.25], SCP=[0](min),
*                     Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
```

```
*                            LGI=[325.27](m), MNI=[0.013], SCI=[0](min),
*                    Continuous simulation parameters:
*                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
*                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                    InterEventTime=[18](hrs),   END=-1
*%-----------------|-----------------------------------------------------------|
*    -JFSA 2021-02-23 "TODD_UnD" is part of the Corrigan sub-catchment. "TODD_UnD" now is called "corr2" and its parameters remain the same.
*CONTINUOUS NASHYD   NHYD=["TODD_UnD"], DT=[1]min, AREA=[12.47](ha),
*                    DWF=[0](cms), CN/C=[77],  IA=[4.67](mm),
*                    N=[3], TP=[1.10]hrs,
*                    Continuous simulation parameters:
*                    IaRECper=[4](hrs),
*                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                    InterEventTime=[12](hrs)
*                    Baseflow simulation parameters:
*                    BaseFlowOption=[1] ,
*                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
*                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
*# 5-Year + 12% Capture
*COMPUTE DUALHYD     NHYDin=["TODD_MJ"], CINLET=[3.314](cms), NINLET=[1],
*                    MajNHYD=["TODD_MJj"]
*                    MinNHYD=["TODD_MJn"]
*                    TMJSTO=[0.1](cu-m)
ROUTE RESERVOIR     NHYDout=["TODD_MJn"] ,NHYDin=["TODD_MJ"] ,
                    RDT=[1](min),
                          TABLE of ( OUTFLOW-STORAGE ) values
                                      (cms) - (ha-m)
                                    [    0.0 , 0.0    ]
                                    [ 3.314  , 0.0001 ]
                                    [    -1  ,  -1    ]  (max twenty pts)
                          NHYDovf=["TODD_MJj"] ,
*%-----------------|-----------------------------------------------------------|
*# 5-Year + 12% Capture
*COMPUTE DUALHYD     NHYDin=["TODD_MN1"], CINLET=[0.227](cms), NINLET=[1],
*                    MajNHYD=["TODD_MN1j"]
*                    MinNHYD=["TODD_MN1n"]
*                    TMJSTO=[0.1](cu-m)
*ROUTE RESERVOIR     NHYDout=["TODD_MN1n"] ,NHYDin=["TODD_MN1"] ,
*                    RDT=[1](min),
*                          TABLE of ( OUTFLOW-STORAGE ) values
*                                      (cms) - (ha-m)
*                                    [    0.0 , 0.0    ]
*                                    [ 0.227  , 0.0001 ]
*                                    [    -1  ,  -1    ]  (max twenty pts)
*                          NHYDovf=["TODD_MN1j"] ,
*%-----------------|-----------------------------------------------------------|
*COMPUTE DUALHYD     NHYDin=["TODD_MN2"], CINLET=[0.268](cms), NINLET=[1],
*                    MajNHYD=["TODD_MN2j"]
*                    MinNHYD=["TODD_MN2n"]
*                    TMJSTO=[0.1](cu-m)
ROUTE RESERVOIR     NHYDout=["TODD_MN2n"] ,NHYDin=["TODD_MN2"] ,
                    RDT=[1](min),
                          TABLE of ( OUTFLOW-STORAGE ) values
                                      (cms) - (ha-m)
                                    [    0.0 , 0.0    ]
                                    [ 0.268  , 0.0001 ]
                                    [    -1  ,  -1    ]  (max twenty pts)
                          NHYDovf=["TODD_MN2j"] ,
*%-----------------|-----------------------------------------------------------|
*COMPUTE DUALHYD     NHYDin=["TODD_MN3"], CINLET=[0.016](cms), NINLET=[1],
*                    MajNHYD=["TODD_MN3j"]
*                    MinNHYD=["TODD_MN3n"]
*                    TMJSTO=[0.1](cu-m)
ROUTE RESERVOIR     NHYDout=["TODD_MN3n"] ,NHYDin=["TODD_MN3"] ,
```

```
                    RDT=[1](min),
                          TABLE of ( OUTFLOW-STORAGE ) values
                                      (cms) - (ha-m)
                                    [    0.0 , 0.0    ]
                                    [ 0.016  , 0.0001 ]
                                    [    -1  ,  -1    ]  (max twenty pts)
                          NHYDovf=["TODD_MN3j"] ,
*%-----------------|-----------------------------------------------------------|
*    -JFSA 2021-01-19 move A2 from Corrigan sub-catchment to Todd sub-catchment so the major system from A2 can be added to Todd
CONTINUOUS STANDHYD NHYD=["A2"], DT=[1]min, AREA=[25.5](ha),
                    XIMP=[0.42], TIMP=[0.52], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[75],
                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
                            LGI=[566](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[18](hrs),   END=-1
*%-----------------|-----------------------------------------------------------|
COMPUTE DUALHYD     NHYDin=["A2"], CINLET=[1.818](cms), NINLET=[1],
                    MajNHYD=["A2-MJ"]
                    MinNHYD=["A2-MN"]
                    TMJSTO=[924](cu-m)
*%-----------------|-----------------------------------------------------------|
ADD HYD             NHYDsum=["TODD"], NHYDs to add=["TODD_MN2n"+"TODD_MN3n"+"TODD_MJj"+"TODD_P"+"TODD_ALL"+"W_CLAR_MJn"]
*%-----------------|-----------------------------------------------------------|
SAVE HYD            NHYD=["TODD"],   # OF PCYCLES=[-1],  ICASEsh=[1]
                    HYD_COMMENT=["Total Flows at Todd Drain"]
*%-----------------|-----------------------------------------------------------|
*#*****************************************************************************
*#    Todd Pond 3
*#    - Rating curve obtained from Barrhaven South MSS modeling
*#    - stantec 2007, Tributary Drainage Area to MSS Pond 3 = 193 ha
*#*****************************************************************************
ROUTE RESERVOIR     NHYDout=["MS_P3"],  NHYDin=["TODD"],
                    RDT=[1](min),
                          TABLE of ( OUTFLOW-STORAGE ) values
                                      (cms) - (ha-m)
                                    [   0.0 ,  0.0 ]
                                    [ 0.014 , 0.155 ]
                                    [ 0.048 , 0.394 ]
                                    [ 0.061 , 0.56 ]
                                    [ 0.08 , 0.909 ]
                                    [ 0.088 , 1.089 ]
                                    [ 0.109 , 1.652 ]
                                    [ 0.118 , 1.952 ]
                                    [ 0.122 , 2.099 ]
                                    [ 1.972 , 2.269 ]
                                    [ 9.135 , 2.598 ]
                                    [ 15.608 , 2.826 ]
                                    [ 19.256 , 2.942 ]
                                    [ 27.282 , 3.181 ]
                                    [ 40.957 , 3.55 ]
                                    [ 56.372 , 3.929 ]
                                    [ 73.349 , 4.317 ]
                                    [ 85.469 , 4.579 ]
                                    [ 104.771 , 4.977 ]
                                    [   -1  ,  -1  ]  (max twenty pts)
                          NHYDovf=["P3-OVF"]
*%-----------------|-----------------------------------------------------------|
ADD HYD             NHYDsum=["SN_TO"], NHYDs to add=["GreenB"+"MS_P3"+"P3-OVF"+"TODD_MN2j"+"A2-MJ"]
```

```
*%-----------------|-------------------------------------------------------------|
SAVE HYD            NHYD=["SN_TO"],   # OF PCYCLES=[-1],  ICASEsh=[1]
                    HYD_COMMENT=["Total Flows at Todd Drain"]
*%-----------------|-------------------------------------------------------------|
*#
*# Hydrograph from Todd Drain routed to Corrigan Drain
*# Channel X-Section obtained from RVCA Hydraulic Model - Station 2462
*# 2021-02-19 Change the slope from 0.033 % (as per Stantec Report 2007) to 0.05 % so the model will be more stable and give reasonable results. It is justifiable as ROUTE CHANNELs aren't well suited to really flat slopes.
*
ROUTE CHANNEL       NHYDout=["N_TO"] ,NHYDin=["SN_TO"] ,
                    RDT=[1](min),
                    CHLGTH=[280](m),  CHSLOPE=[0.05](%),
                                        FPSLOPE=[0.05](%),
                    SECNUM=[1.0],       NSEG=[3]
                    ( SEGROUGH, SEGDIST (m))=
                      [0.075,-17.72
                      -0.045,17.72
                      0.075,80.62] NSEG times
                    ( DISTANCE (m), ELEVATION (m))=
                    [-83.32, 90.00]
                    [-81.36, 89.50]
                    [-79.12, 89.00]
                    [-76.13, 88.50]
                    [-20.46, 88.00]
                    [-19.36, 87.50]
                    [-18.51, 87.00]
                    [-17.72, 86.50]
                    [-11.95, 85.24]
                    [-0.11, 85.12]
                    [11.49, 85.20]
                    [17.72, 86.50]
                    [19.74, 87.00]
                    [21.22, 87.50]
                    [22.68, 88.00]
                    [24.28, 88.50]
                    [26.79, 89.00]
                    [71.98, 90.00]
                    [80.62, 90.50]
*%-----------------|-------------------------------------------------------------|
SAVE HYD            NHYD=["N_TO"],   # OF PCYCLES=[-1],  ICASEsh=[1]
                    HYD_COMMENT=["Total inflows at Station 2462"]
*%-----------------|-------------------------------------------------------------|
*#*****************************************************************************
*#    Catchment CORRIG
*#    - To Corrigan Drain (south of the Jock)
*#    - Primarily Developed (medium density)
*#    - JFSA JAN 2021, add Corrigan subcatchments as per IBI, July 2008
*#*****************************************************************************
*ROUTE RESERVOIR     NHYDout=["MS_P1"],  NHYDin=["CORRIG"],
*                    RDT=[1](min),
*                          TABLE of ( OUTFLOW-STORAGE ) values
*                                      (cms) - (ha-m)
*                                    [   0.0 ,  0.0 ]
*                                    [   0.06 , 0.58]
*                                    [   -1  ,  -1  ]  (max twenty pts)
*                          NHYDovf=["P1-OVF"]
*%-----------------|-------------------------------------------------------------|
*ADD HYD             NHYDsum=["SN_CO"], NHYDs to add=["N_TO"+"P1-OVF"+"MS_P1"]
*%-----------------|-------------------------------------------------------------|
*SAVE HYD            NHYD=["SN_CO"],   # OF PCYCLES=[-1],  ICASEsh=[1]
*                    HYD_COMMENT=["Total Flows at Corrigan Drain"]
*%-----------------|-------------------------------------------------------------|
*    -JFSA 2021-02-23 "TODD_DEVL" is part of the Corrigan sub-catchment because it drains to Corrigan SWM as per geoOttawa.ca Feb. 2021. "TODD_DEVL" now is called "corr1"
```

```
and its parameters remain the same.
CONTINUOUS STANDHYD NHYD=["corr1"], DT=[1]min, AREA=[15.87](ha),
                    XIMP=[0.63], TIMP=[0.63], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[77],
                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
                            LGI=[325.27](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[18](hrs),   END=-1
*%-----------------|-----------------------------------------------------------|
*      -JFSA 2021-02-23 add DUALHYD for "corr1". "corr1" DUALHYD Parameters are the
same as A2 DUALHYD Parameters because A2 is the nearest sub-catchment to "corr1".
*       At the same time, Corrigan Report, IBI group 2008 has no DUALHYD Parameters for
A1-Corrig
COMPUTE DUALHYD     NHYDin=["corr1"], CINLET=[1.818](cms), NINLET=[1],
                    MajNHYD=["corr1-MJ"]
                    MinNHYD=["corr1-MN"]
                    TMJSTO=[924](cu-m)
*%-----------------|-----------------------------------------------------------|
*    -JFSA 2021-02-23 "TODD_UnD" is part of the Corrigan sub-catchment. "TODD_UnD" now
is called "corr2" and its parameters remain the same.
CONTINUOUS NASHYD   NHYD=["corr2"], DT=[1]min, AREA=[12.47](ha),
                    DWF=[0](cms), CN/C=[77],  IA=[4.67](mm),
                    N=[3], TP=[1.10]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
*     -JFSA 2021-01-19 change A1-Corrig to be developed as per geoottawa website and
apply the parameters of A2, the nearest sub-catchment to A1-Corrig, LGI is calculated
based on A1-Corrig area
*     -JFSA 2021-01-19 update all Corrigan areas based on GIS measurements, and keep
LGI as it is from Corrigan Report, IBI Group, 2008 because LGI calculated is less than
LGI from the Corrigan Report
CONTINUOUS STANDHYD NHYD=["A1-Corrig"], DT=[1]min, AREA=[15.75](ha),
                    XIMP=[0.42], TIMP=[0.52], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[75],
                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
                            LGI=[324.037](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[18](hrs),   END=-1
*
*      -JFSA 2021-01-25 add DUALHYD for A1-Corrig. A1-Corrig DUALHYD Parameters are the
same as A2 DUALHYD Parameters because A2 is the nearest sub-catchment to A1-Corrig.
*       At the same time, Corrigan Report, IBI group 2008 has no DUALHYD Parameters for
A1-Corrig
COMPUTE DUALHYD     NHYDin=["A1-Corrig"], CINLET=[1.818](cms), NINLET=[1],
                    MajNHYD=["A1-MJ"]
                    MinNHYD=["A1-MN"]
                    TMJSTO=[924](cu-m)
*%-----------------|-----------------------------------------------------------|
*CONTINUOUS NASHYD   NHYD=["A1-Corrig"], DT=[1]min, AREA=[15.75](ha),
*                    DWF=[0](cms),  CN/C=[66], IA=[2.5](mm),
*                    N=[3.0], TP=[0.36]hrs,
```

```
*                         Continuous simulation parameters:
*                         IaRECper=[4](hrs),
*                         SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                         InterEventTime=[12](hrs)
*                         Baseflow simulation parameters:
*                         BaseFlowOption=[1] ,
*                         InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
*                         VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["B1"], DT=[1]min, AREA=[2.77](ha),
                    DWF=[0](cms),  CN/C=[56], IA=[2.5](mm),
                    N=[3.0], TP=[0.23]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["A4"], DT=[1]min, AREA=[1.27](ha),
                    XIMP=[0.65], TIMP=[0.65], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[75],
                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
                            LGI=[253](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[18](hrs),   END=-1
*%-----------------|-----------------------------------------------------------|
COMPUTE DUALHYD     NHYDin=["A4"], CINLET=[0.405](cms), NINLET=[1],
                    MajNHYD=["A4-MJ"]
                    MinNHYD=["A4-MN"]
                    TMJSTO=[68](cu-m)
*%-----------------|-----------------------------------------------------------|
ADD HYD             NHYDsum=["MH101"], NHYDs to
add=["A1-MJ"+"A1-MN"+"corr1-MJ"+"corr1-MN"+"corr2"+"B1"+"A4-MN"]
*%-----------------|-----------------------------------------------------------|
SAVE HYD            NHYD=["MH101"],   # OF PCYCLES=[-1],  ICASEsh=[1]
                    HYD_COMMENT=["Total Flows at MH101"]
*%-----------------|-----------------------------------------------------------|
ROUTE PIPE          PTYPE=[1]circ, NHYDout=["101-102"], RNUMBER=[1.0], PDIAM=[1050](mm),
                    PLNGTH=[368](m), PROUGH=[0.013], PSLOPE=[0.0054](m/m),
                    NHYDin=["MH101"], RDT=[1]
*%-----------------|-----------------------------------------------------------|
*    -JFSA 2021-01-19 move A2 from Corrigan sub-catchment to Todd sub-catchment so the
major system from A2 can be added to Todd
*CONTINUOUS STANDHYD NHYD=["A2"], DT=[1]min, AREA=[25.5](ha),
*                    XIMP=[0.42], TIMP=[0.52], DWF=[0](cms), LOSS=[2],
*                    SCS curve number CN=[75],
*                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
*                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
*                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
*                            LGI=[566](m), MNI=[0.013], SCI=[0](min),
*                    Continuous simulation parameters:
*                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
*                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                    InterEventTime=[18](hrs),   END=-1
*%-----------------|-----------------------------------------------------------|
*COMPUTE DUALHYD     NHYDin=["A2"], CINLET=[1.818](cms), NINLET=[1],
*                    MajNHYD=["A2-MJ"]
*                    MinNHYD=["A2-MN"]
*                    TMJSTO=[924](cu-m)
```

```
*%-----------------|-------------------------------------------------------------|
ADD HYD              NHYDsum=["MH102"], NHYDs to add=["A2-MN"+"101-102"]
*%-----------------|-------------------------------------------------------------|
SAVE HYD             NHYD=["MH102"],   # OF PCYCLES=[-1],  ICASEsh=[1]
                     HYD_COMMENT=["Total Flows at MH102"]
*%-----------------|-------------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["A5"], DT=[1]min, AREA=[1.6](ha),
                     XIMP=[0.71], TIMP=[0.71], DWF=[0](cms), LOSS=[2],
                     SCS curve number CN=[75],
                     Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                             LGP=[40](m), MNP=[0.25], SCP=[0](min),
                     Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
                             LGI=[300](m), MNI=[0.013], SCI=[0](min),
                     Continuous simulation parameters:
                     IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                     SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                     InterEventTime=[18](hrs),   END=-1
*%-----------------|-------------------------------------------------------------|
ADD HYD              NHYDsum=["A5T"], NHYDs to add=["A4-MJ"+"A5"]
*%-----------------|-------------------------------------------------------------|
COMPUTE DUALHYD      NHYDin=["A5T"], CINLET=[0.357](cms), NINLET=[1],
                     MajNHYD=["A5-MJ"]
                     MinNHYD=["A5-MN"]
                     TMJSTO=[60](cu-m)
*%-----------------|-------------------------------------------------------------|
*   -JFSA Jan. 2021, A3 is a part of Todd so it is removed
*   -JFSA Jan. 2021, "A2-MJ" added to "Todd"
*CONTINUOUS STANDHYD NHYD=["A3"], DT=[1]min, AREA=[18.4](ha),
*                     XIMP=[0.58], TIMP=[0.65], DWF=[0](cms), LOSS=[2],
*                     SCS curve number CN=[75],
*                     Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
*                             LGP=[40](m), MNP=[0.25], SCP=[0](min),
*                     Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
*                             LGI=[450](m), MNI=[0.013], SCI=[0](min),
*                     Continuous simulation parameters:
*                     IaRECper=[4](hrs),  IaRECimp=[4](hrs),
*                     SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                     InterEventTime=[18](hrs),   END=-1
*%-----------------|-------------------------------------------------------------|
*ADD HYD              NHYDsum=["A3-A2MJ"], NHYDs to add=["A2-MJ"+"A3"]
*%-----------------|-------------------------------------------------------------|
*COMPUTE DUALHYD      NHYDin=["A3-A2MJ"], CINLET=[2.208](cms), NINLET=[1],
*                     MajNHYD=["A3R-MJ"]
*                     MinNHYD=["A3R-MN"]
*                     TMJSTO=[908](cu-m)
*%-----------------|-------------------------------------------------------------|
ROUTE PIPE           PTYPE=[1]circ, NHYDout=["102-103"], RNUMBER=[1.0], PDIAM=[1500](mm),
                     PLNGTH=[504](m), PROUGH=[0.013], PSLOPE=[0.0028](m/m),
                     NHYDin=["MH102"], RDT=[1]
*%-----------------|-------------------------------------------------------------|
ADD HYD              NHYDsum=["MH103"], NHYDs to add=["102-103"+"A5-MN"]
*%-----------------|-------------------------------------------------------------|
SAVE HYD             NHYD=["MH103"],   # OF PCYCLES=[-1],  ICASEsh=[1]
                     HYD_COMMENT=["Total Flows at MH103"]
*%-----------------|-------------------------------------------------------------|
ROUTE PIPE           PTYPE=[1]circ, NHYDout=["103-104"], RNUMBER=[1.0], PDIAM=[1650](mm),
                     PLNGTH=[438](m), PROUGH=[0.013], PSLOPE=[0.0046](m/m),
                     NHYDin=["MH103"], RDT=[1]
*%-----------------|-------------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["A6"], DT=[1]min, AREA=[1.56](ha),
                     XIMP=[0.71], TIMP=[0.71], DWF=[0](cms), LOSS=[2],
                     SCS curve number CN=[75],
                     Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                             LGP=[40](m), MNP=[0.25], SCP=[0](min),
                     Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
                             LGI=[280](m), MNI=[0.013], SCI=[0](min),
```

```
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[18](hrs),   END=-1
*%-----------------|-----------------------------------------------------------|
ADD HYD             NHYDsum=["A6T"], NHYDs to add=["A5-MJ"+"A6"]
*%-----------------|-----------------------------------------------------------|
COMPUTE DUALHYD     NHYDin=["A6T"], CINLET=[0.357](cms), NINLET=[1],
                    MajNHYD=["A6-MJ"]
                    MinNHYD=["A6-MN"]
                    TMJSTO=[60](cu-m)
*%-----------------|-----------------------------------------------------------|
*   -JFSA Jan. 2021, A7-corrig is a part of Todd so it is removed
*CONTINUOUS STANDHYD NHYD=["A7-corrig"], DT=[1]min, AREA=[11.8](ha),
*                    XIMP=[0.41], TIMP=[0.54], DWF=[0](cms), LOSS=[2],
*                    SCS curve number CN=[75],
*                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
*                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
*                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
*                            LGI=[438](m), MNI=[0.013], SCI=[0](min),
*                    Continuous simulation parameters:
*                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
*                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                    InterEventTime=[18](hrs),   END=-1
*%-----------------|-----------------------------------------------------------|
*ADD HYD             NHYDsum=["A7-A3RMJ"], NHYDs to add=["A3R-MJ"+"A7-corrig"]
*%-----------------|-----------------------------------------------------------|
*COMPUTE DUALHYD     NHYDin=["A7-A3RMJ"], CINLET=[1.003](cms), NINLET=[1],
*                    MajNHYD=["A7R-MJ"]
*                    MinNHYD=["A7R-MN"]
*                    TMJSTO=[496](cu-m)
*%-----------------|-----------------------------------------------------------|
ADD HYD             NHYDsum=["MH104"], NHYDs to add=["A6-MN"+"103-104"+"TODD_MJn"]
*%-----------------|-----------------------------------------------------------|
SAVE HYD            NHYD=["MH104"],   # OF PCYCLES=[-1],  ICASEsh=[1]
                    HYD_COMMENT=["Total Flows at MH104"]
*%-----------------|-----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["B2"], DT=[1]min, AREA=[12.31](ha),
                    XIMP=[0.41], TIMP=[0.54], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[75],
                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
                            LGI=[417](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[18](hrs),   END=-1
*%-----------------|-----------------------------------------------------------|
COMPUTE DUALHYD     NHYDin=["B2"], CINLET=[1.029](cms), NINLET=[1],
                    MajNHYD=["B2-MJ"]
                    MinNHYD=["B2-MN"]
                    TMJSTO=[508](cu-m)
*%-----------------|-----------------------------------------------------------|
ROUTE PIPE          PTYPE=[1]circ, NHYDout=["315-333"], RNUMBER=[1.0], PDIAM=[1200](mm),
                    PLNGTH=[254](m), PROUGH=[0.013], PSLOPE=[0.001](m/m),
                    NHYDin=["B2-MN"], RDT=[1]
*%-----------------|-----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["B3"], DT=[1]min, AREA=[5.59](ha),
                    XIMP=[0.41], TIMP=[0.54], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[75],
                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
                            LGI=[345](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
```

```
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[18](hrs),   END=-1
*%-----------------|-----------------------------------------------------------|
COMPUTE DUALHYD     NHYDin=["B3"], CINLET=[0.459](cms), NINLET=[1],
                    MajNHYD=["B3-MJ"]
                    MinNHYD=["B3-MN"]
                    TMJSTO=[227](cu-m)
*%-----------------|-----------------------------------------------------------|
ADD HYD             NHYDsum=["MH333"], NHYDs to add=["B3-MN"+"315-333"]
*%-----------------|-----------------------------------------------------------|
SAVE HYD            NHYD=["MH333"],   # OF PCYCLES=[-1],  ICASEsh=[1]
                    HYD_COMMENT=["Total Flows at MH333"]
*%-----------------|-----------------------------------------------------------|
ROUTE PIPE          PTYPE=[1]circ, NHYDout=["333-335"], RNUMBER=[1.0], PDIAM=[1200](mm),
                    PLNGTH=[251](m), PROUGH=[0.013], PSLOPE=[0.001](m/m),
                    NHYDin=["MH333"], RDT=[1]
*%-----------------|-----------------------------------------------------------|
ROUTE PIPE          PTYPE=[1]circ, NHYDout=["335-338"], RNUMBER=[1.0], PDIAM=[1200](mm),
                    PLNGTH=[185](m), PROUGH=[0.013], PSLOPE=[0.001](m/m),
                    NHYDin=["333-335"], RDT=[1]
*%-----------------|-----------------------------------------------------------|
ROUTE PIPE          PTYPE=[1]circ, NHYDout=["338-340"], RNUMBER=[1.0], PDIAM=[1350](mm),
                    PLNGTH=[233](m), PROUGH=[0.013], PSLOPE=[0.001](m/m),
                    NHYDin=["335-338"], RDT=[1]
*%-----------------|-----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["B4"], DT=[1]min, AREA=[7.6](ha),
                    XIMP=[0.41], TIMP=[0.54], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[75],
                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
                            LGI=[388](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[18](hrs),   END=-1
*%-----------------|-----------------------------------------------------------|
COMPUTE DUALHYD     NHYDin=["B4"], CINLET=[0.655](cms), NINLET=[1],
                    MajNHYD=["B4-MJ"]
                    MinNHYD=["B4-MN"]
                    TMJSTO=[323](cu-m)
*%-----------------|-----------------------------------------------------------|
ADD HYD             NHYDsum=["MH340"], NHYDs to add=["338-340"+"B4-MN"]
*%-----------------|-----------------------------------------------------------|
SAVE HYD            NHYD=["MH340"],   # OF PCYCLES=[-1],  ICASEsh=[1]
                    HYD_COMMENT=["Total Flows at MH340"]
*%-----------------|-----------------------------------------------------------|
ROUTE PIPE          PTYPE=[1]circ, NHYDout=["340-104"], RNUMBER=[1.0], PDIAM=[1650](mm),
                    PLNGTH=[240](m), PROUGH=[0.013], PSLOPE=[0.0015](m/m),
                    NHYDin=["MH340"], RDT=[1]
*%-----------------|-----------------------------------------------------------|
ADD HYD             NHYDsum=["MH104T"], NHYDs to add=["340-104"+"MH104"]
*%-----------------|-----------------------------------------------------------|
ROUTE PIPE          PTYPE=[2]rect, NHYDout=["104-105"], RNUMBER=[1.0],
PWIDTH=[2400](mm)  by PHEIGHT=[2100](mm),
                    PLNGTH=[380](m), PROUGH=[0.013], PSLOPE=[0.001](m/m),
                    NHYDin=["MH104T"], RDT=[1]
*%-----------------|-----------------------------------------------------------------------
------------------------------|
CONTINUOUS STANDHYD NHYD=["B5"], DT=[1]min, AREA=[2.2](ha),
                    XIMP=[0.57], TIMP=[0.57], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[75],
                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
```

```
                        LGI=[187](m), MNI=[0.013], SCI=[0](min),
                Continuous simulation parameters:
                IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                InterEventTime=[18](hrs),   END=-1
*%-----------------|-------------------------------------------------------------|
COMPUTE DUALHYD     NHYDin=["B5"], CINLET=[0.260](cms), NINLET=[1],
                    MajNHYD=["B5-MJ"]
                    MinNHYD=["B5-MN"]
                    TMJSTO=[250](cu-m)
*%-----------------|-------------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["A8"], DT=[1]min, AREA=[0.96](ha),
                    XIMP=[0.71], TIMP=[0.71], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[75],
                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
                            LGI=[186](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[18](hrs),   END=-1
*%-----------------|-------------------------------------------------------------|
ADD HYD             NHYDsum=["A8T"], NHYDs to add=["A6-MJ"+"A8"]
*%-----------------|-------------------------------------------------------------|
COMPUTE DUALHYD     NHYDin=["A8T"], CINLET=[0.238](cms), NINLET=[1],
                    MajNHYD=["A8-MJ"]
                    MinNHYD=["A8-MN"]
                    TMJSTO=[40](cu-m)
*%-----------------|-------------------------------------------------------------|
ADD HYD             NHYDsum=["MH105"], NHYDs to
add=["104-105"+"B5-MN"+"A8-MN"+"TODD_MN3j"]
*%-----------------|-------------------------------------------------------------|
SAVE HYD            NHYD=["MH105"],   # OF PCYCLES=[-1],  ICASEsh=[1]
                    HYD_COMMENT=["Total Flows at MH105"]
*%-----------------|-------------------------------------------------------------|
DIVERT HYD          NHYDin=["A8-MJ"] NIDout=[2]max five,
                    outflow hydrographs (NHYDs)=["A8-MJ-JR" "A8-MJ-B6"]
                    flow distribution table: (modify as necessary)
                    Note: all flows are in (cms)
                      QIDi +  QIDii  =  QTOTAL
                    [   0  +    0    =    0   ]                    ]
                    [   50 +   50    =    100  ] end
*%-----------------|--------------------------------------------------------------------
-----------------------------|
DIVERT HYD          NHYDin=["MH105"] NIDout=[2]max five,
                    outflow hydrographs (NHYDs)=["MH105-JR"  "MH105-B6"]
                    flow distribution table: (modify as necessary)
                    Note: all flows are in (cms)
                      QIDi +  QIDii  =  QTOTAL
                    [   0  +    0    =    0   ]
                    [   0  +   3.0  =   3.0  ]
                    [  96.9+  3.1    =   100  ] end
*%-----------------|--------------------------------------------------------------------
-----------------------------|
CONTINUOUS STANDHYD NHYD=["B7"], DT=[1]min, AREA=[7.19](ha),
                    XIMP=[0.41], TIMP=[0.54], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[75],
                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
                            LGI=[211](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[18](hrs),   END=-1
```

```
*%-----------------|------------------------------------------------------------|
ADD HYD             NHYDsum=["B7-B4MJ"], NHYDs to add=["B4-MJ"+"B7"]
*%-----------------|------------------------------------------------------------|
COMPUTE DUALHYD     NHYDin=["B7-B4MJ"], CINLET=[0.629](cms), NINLET=[1],
                    MajNHYD=["B7R-MJ"]
                    MinNHYD=["B7R-MN"]
                    TMJSTO=[311](cu-m)
*%-----------------|------------------------------------------------------------|
ROUTE PIPE          PTYPE=[1]circ, NHYDout=["360-106A"], RNUMBER=[1.0], PDIAM=[1050](mm),
                    PLNGTH=[167](m), PROUGH=[0.013], PSLOPE=[0.001](m/m),
                    NHYDin=["B7R-MN"], RDT=[1]
*%-----------------|------------------------------------------------------------|
*     -JFSA 2021-01-19 change B6 to be developed as per geoottawa website and apply the
parameters of A7, the nearest sub-catchment to B6, LGI is calculated based on B6 area
CONTINUOUS STANDHYD NHYD=["B6"], DT=[1]min, AREA=[3.29](ha),
                    XIMP=[0.41], TIMP=[0.54], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[75],
                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
                            LGI=[148.099](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[18](hrs),   END=-1
*%-----------------|------------------------------------------------------------|
*     -JFSA 2021-01-25   add B1 DUALHYD as per Corrigan Report, IBI Group, 2008
COMPUTE DUALHYD     NHYDin=["B6"], CINLET=[0.064](cms), NINLET=[1],
                    MajNHYD=["B6-MJ"]
                    MinNHYD=["B6-MN"]
                    TMJSTO=[5484](cu-m)
*%-----------------|------------------------------------------------------------|
*CONTINUOUS NASHYD   NHYD=["B6"], DT=[1]min, AREA=[3.29](ha),
*                    DWF=[0](cms),  CN/C=[75], IA=[2.5](mm),
*                    N=[3.0], TP=[0.36]hrs,
*                    Continuous simulation parameters:
*                    IaRECper=[4](hrs),
*                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                    InterEventTime=[12](hrs)
*                    Baseflow simulation parameters:
*                    BaseFlowOption=[1] ,
*                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
*                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|------------------------------------------------------------|
*%    -EX-LAND is external land. It is a part of JOCKVA sub-catchment as per Corrigan
Report, IBI Group, 2008
CONTINUOUS STANDHYD NHYD=["EX-LAND"], DT=[1]min, AREA=[32.5](ha),
                    XIMP=[0.50], TIMP=[0.50], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[74],
                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
                            LGI=[465.475](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[18](hrs),   END=-1
*%-----------------|------------------------------------------------------------|
COMPUTE DUALHYD     NHYDin=["EX-LAND"], CINLET=[2.275](cms), NINLET=[1],
                    MajNHYD=["EX-LAND-MJ"]
                    MinNHYD=["EX-LAND-MN"]
                    TMJSTO=[1365](cu-m)
*%-----------------|------------------------------------------------------------|
ADD HYD             NHYDsum=["B6-B7ExMJ"], NHYDs to
add=["B7R-MJ"+"EX-LAND-MJ"+"B5-MJ"+"B6-MJ"+"B6-MN"+"A8-MJ-B6"]
*%-----------------|------------------------------------------------------------|
```

```
COMPUTE DUALHYD     NHYDin=["B6-B7ExMJ"], CINLET=[0.064](cms), NINLET=[1],
                    MajNHYD=["B6R-MJ"]
                    MinNHYD=["B6R-MN"]
                    TMJSTO=[5484](cu-m)
*%-----------------|-----------------------------------------------------------|
ROUTE PIPE          PTYPE=[1]circ, NHYDout=["105-106A"], RNUMBER=[1.0], PDIAM=[1800](mm),
                    PLNGTH=[208](m), PROUGH=[0.013], PSLOPE=[0.001](m/m),
                    NHYDin=["MH105-B6"], RDT=[1]
*%-----------------|-----------------------------------------------------------|
ADD HYD             NHYDsum=["MH106A"], NHYDs to
add=["360-106A"+"105-106A"+"B6R-MN"+"B6R-MJ"]
*%-----------------|-----------------------------------------------------------|
SAVE HYD            NHYD=["MH106A"],   # OF PCYCLES=[-1],  ICASEsh=[1]
                    HYD_COMMENT=["Total Flows at MH106A"]
*%-----------------|-----------------------------------------------------------|
*%    -JFSA 2021-01-12 THE MANHOLE MH106 is called MH117/106 in Corrigan Report, IBI
Group, July 2008
*%
ROUTE PIPE          PTYPE=[1]circ, NHYDout=["106A-106"], RNUMBER=[1.0], PDIAM=[1800](mm),
                    PLNGTH=[190](m), PROUGH=[0.013], PSLOPE=[0.001](m/m),
                    NHYDin=["MH106A"], RDT=[1]
*%-----------------|-----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["A9"], DT=[1]min, AREA=[2.44](ha),
                    XIMP=[0.71], TIMP=[0.71], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[75],
                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
                            LGI=[262](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[18](hrs),   END=-1
*%-----------------|-----------------------------------------------------------|
COMPUTE DUALHYD     NHYDin=["A9"], CINLET=[0.547](cms), NINLET=[1],
                    MajNHYD=["A9-MJ"]
                    MinNHYD=["A9-MN"]
                    TMJSTO=[0](cu-m)
*%-----------------|-----------------------------------------------------------|
ADD HYD             NHYDsum=["MH106"], NHYDs to add=["106A-106"+"A9-MN"]
*%-----------------|-----------------------------------------------------------|
SAVE HYD            NHYD=["MH106"],   # OF PCYCLES=[-1],  ICASEsh=[1]
                    HYD_COMMENT=["Total Flows at MH106"]
*%-----------------|-----------------------------------------------------------|
*%    -JFSA 2021-01-12 THE MANHOLE MH107 is called MH118/107 in Corrigan Report, IBI
Group, July 2008
*%
ROUTE PIPE          PTYPE=[1]circ, NHYDout=["106-107"], RNUMBER=[1.0], PDIAM=[1800](mm),
                    PLNGTH=[122.5](m), PROUGH=[0.013], PSLOPE=[0.001](m/m),
                    NHYDin=["MH106"], RDT=[1]
*%-----------------|-----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["A10"], DT=[1]min, AREA=[4.14](ha),
                    XIMP=[0.35], TIMP=[0.47], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[75],
                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
                            LGI=[183](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[18](hrs),   END=-1
*%-----------------|-----------------------------------------------------------|
COMPUTE DUALHYD     NHYDin=["A10"], CINLET=[0.310](cms), NINLET=[1],
                    MajNHYD=["A10-MJ"]
                    MinNHYD=["A10-MN"]
```

```
                         TMJSTO=[228](cu-m)
*%-----------------|-----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["A11"], DT=[1]min, AREA=[10.61](ha),
                         XIMP=[0.53], TIMP=[0.62], DWF=[0](cms), LOSS=[2],
                         SCS curve number CN=[75],
                         Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                                 LGP=[40](m), MNP=[0.25], SCP=[0](min),
                         Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
                                 LGI=[379](m), MNI=[0.013], SCI=[0](min),
                         Continuous simulation parameters:
                         IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                         SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                         InterEventTime=[18](hrs),   END=-1
*%-----------------|-----------------------------------------------------------|
COMPUTE DUALHYD     NHYDin=["A11"], CINLET=[0.993](cms), NINLET=[1],
                         MajNHYD=["A11-MJ"]
                         MinNHYD=["A11-MN"]
                         TMJSTO=[556](cu-m)
*%-----------------|-----------------------------------------------------------|
ADD HYD             NHYDsum=["MH107"], NHYDs to add=["106-107"+"A10-MN"+"A11-MN"]
*%-----------------|-----------------------------------------------------------|
SAVE HYD            NHYD=["MH107"],   # OF PCYCLES=[-1],  ICASEsh=[1]
                         HYD_COMMENT=["Total Flows at MH107"]
*%-----------------|-----------------------------------------------------------|
ROUTE PIPE          PTYPE=[1]circ, NHYDout=["107-119"], RNUMBER=[1.0], PDIAM=[1800](mm),
                         PLNGTH=[114](m), PROUGH=[0.013], PSLOPE=[0.0012](m/m),
                         NHYDin=["MH107"], RDT=[1]
*%-----------------|-----------------------------------------------------------|
*%    -JFSA 2021-01-12 THE MANHOLE MH108 is called MH120/108 in Corrigan Report, IBI
Group, July 2008
*%
ROUTE PIPE          PTYPE=[1]circ, NHYDout=["119-108"], RNUMBER=[1.0], PDIAM=[1800](mm),
                         PLNGTH=[65.8](m), PROUGH=[0.013], PSLOPE=[0.0012](m/m),
                         NHYDin=["107-119"], RDT=[1]
*%-----------------|-----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["A12"], DT=[1]min, AREA=[12.29](ha),
                         XIMP=[0.41], TIMP=[0.54], DWF=[0](cms), LOSS=[2],
                         SCS curve number CN=[75],
                         Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                                 LGP=[40](m), MNP=[0.25], SCP=[0](min),
                         Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
                                 LGI=[183](m), MNI=[0.013], SCI=[0](min),
                         Continuous simulation parameters:
                         IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                         SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                         InterEventTime=[18](hrs),   END=-1
*%-----------------|-----------------------------------------------------------|
COMPUTE DUALHYD     NHYDin=["A12"], CINLET=[1.029](cms), NINLET=[1],
                         MajNHYD=["A12-MJ"]
                         MinNHYD=["A12-MN"]
                         TMJSTO=[672](cu-m)
*%-----------------|-----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["A13"], DT=[1]min, AREA=[2.59](ha),
                         XIMP=[0.71], TIMP=[0.71], DWF=[0](cms), LOSS=[2],
                         SCS curve number CN=[75],
                         Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                                 LGP=[40](m), MNP=[0.25], SCP=[0](min),
                         Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
                                 LGI=[379](m), MNI=[0.013], SCI=[0](min),
                         Continuous simulation parameters:
                         IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                         SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                         InterEventTime=[18](hrs),   END=-1
*%-----------------|-----------------------------------------------------------|
COMPUTE DUALHYD     NHYDin=["A13"], CINLET=[0.571](cms), NINLET=[1],
                         MajNHYD=["A13-MJ"]
```

```
                    MinNHYD=["A13-MN"]
                    TMJSTO=[0](cu-m)
*%-----------------|-----------------------------------------------------------|
*   -JFSA 2021-01-22 add the Corrigan pond area ("Pond-Block")
CONTINUOUS STANDHYD NHYD=["Pond-Block"], DT=[1]min, AREA=[2.94](ha),
                    XIMP=[0.415], TIMP=[0.415], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[75],
                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
                            LGI=[183](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[18](hrs),   END=-1
*%-----------------|-----------------------------------------------------------|
ADD HYD             NHYDsum=["MH108"], NHYDs to add=["119-108"+"A13-MN"+"A12-MN"]
*%-----------------|-----------------------------------------------------------|
SAVE HYD            NHYD=["MH108"],   # OF PCYCLES=[-1],  ICASEsh=[1]
                    HYD_COMMENT=["Total Flows at MH108"]
*%-----------------|-----------------------------------------------------------|
ROUTE PIPE          PTYPE=[1]circ, NHYDout=["108-116"], RNUMBER=[1.0], PDIAM=[1800](mm),
                    PLNGTH=[76.6](m), PROUGH=[0.013], PSLOPE=[0.0013](m/m),
                    NHYDin=["MH108"], RDT=[1]
*%-----------------|-----------------------------------------------------------|
ROUTE PIPE          PTYPE=[1]circ, NHYDout=["116-corrig"], RNUMBER=[1.0],
PDIAM=[1800](mm),
                    PLNGTH=[79.5](m), PROUGH=[0.013], PSLOPE=[0.0013](m/m),
                    NHYDin=["108-116"], RDT=[1]
*%-----------------|-----------------------------------------------------------|
ADD HYD             NHYDsum=["Corrigan"], NHYDs to add=["116-corrig"+"Pond-Block"]
*%-----------------|-----------------------------------------------------------|
SAVE HYD            NHYD=["Corrigan"],   # OF PCYCLES=[-1],  ICASEsh=[1]
                    HYD_COMMENT=["Total Flows at Corrigan Pond]
*%-----------------|-----------------------------------------------------------|
ROUTE RESERVOIR     NHYDout=["Co-P"],  NHYDin=["Corrigan"],
                    RDT=[1](min),
                          TABLE of ( OUTFLOW-STORAGE ) values
                                      (cms) - (ha-m)
                                    [   0.0 ,  0.0 ]
                                    [   0.015 , 0.04118]
                                    [   0.030 , 0.08297]
                                    [   0.045 , 0.12537]
                                    [   0.060 , 0.16837]
                                    [   0.075 , 0.21199]
                                    [   0.090 , 0.27545]
                                    [   0.105 , 0.34650]
                                    [   0.120 , 0.42049]
                                    [   0.135 , 0.50188]
                                    [   0.186 , 0.60307]
                                    [   2.110 , 0.79083]
                                    [   5.874 , 1.00271]
                                    [   11.395 , 1.29643]
                                    [   18.770 , 1.62054]
                                    [   28.143 , 1.97516]
                                    [   -1  ,  -1  ]  (max twenty pts)
                          NHYDovf=["Co-P-OVF"]
*%-----------------|-----------------------------------------------------------|
ADD HYD             NHYDsum=["corrig"], NHYDs to
add=["Co-P-OVF"+"Co-P"+"N_TO"+"MH105-JR"+"A8-MJ-JR"+"A9-MJ"+"A10-MJ"+"A11-MJ"+"A12-MJ"+"A
13-MJ"]
*%-----------------|-----------------------------------------------------------|
SAVE HYD            NHYD=["corrig"],   # OF PCYCLES=[-1],  ICASEsh=[1]
                    HYD_COMMENT=["Total Flows at Corrigan Pond"]
*%-----------------|-----------------------------------------------------------|
*#*****************************************************************************
```

```
*#    Corrigan Pond 1
*#    - Rating curve obtained from Barrhaven South MSS modeling
*#    - Tributary Drainage Area to MSS Pond 1 = 145 ha
*#******************************************************************************
*ROUTE RESERVOIR     NHYDout=["MS_P1"],  NHYDin=["CORRIG"],
*                    RDT=[1](min),
*                          TABLE of ( OUTFLOW-STORAGE ) values
*                                      (cms) - (ha-m)
*                                    [   0.0 ,  0.0 ]
*                                    [   0.06 , 0.58]
*                                    [   -1  ,  -1  ]  (max twenty pts)
*                          NHYDovf=["P1-OVF"]
*%-----------------|-----------------------------------------------------------|
*ADD HYD             NHYDsum=["SN_CO"], NHYDs to add=["N_TO"+"P1-OVF"+"MS_P1"]
*%-----------------|-----------------------------------------------------------|
*SAVE HYD            NHYD=["SN_CO"],   # OF PCYCLES=[-1],  ICASEsh=[1]
*                    HYD_COMMENT=["Total Flows at Corrigan Drain"]
*%-----------------|-----------------------------------------------------------|
*#
*# Hydrograph from Corrigan Drain routed to Jockvale Road
*# Channel X-Section obtained from RVCA Hydraulic Model - Station 2462
*#
ROUTE CHANNEL       NHYDout=["N_MI"] ,NHYDin=["corrig"] ,
                    RDT=[1](min),
                    CHLGTH=[580](m),  CHSLOPE=[0.4448](%),
                                        FPSLOPE=[0.4448](%),
                    SECNUM=[1.0],       NSEG=[3]
                    ( SEGROUGH, SEGDIST (m))=
                      [0.075,-17.72
                      -0.045,17.72
                      0.075,80.62] NSEG times
                    ( DISTANCE (m), ELEVATION (m))=
                    [-83.32, 90.00]
                    [-81.36, 89.50]
                    [-79.12, 89.00]
                    [-76.13, 88.50]
                    [-20.46, 88.00]
                    [-19.36, 87.50]
                    [-18.51, 87.00]
                    [-17.72, 86.50]
                    [-11.95, 85.24]
                    [-0.11, 85.12]
                    [11.49, 85.20]
                    [17.72, 86.50]
                    [19.74, 87.00]
                    [21.22, 87.50]
                    [22.68, 88.00]
                    [24.28, 88.50]
                    [26.79, 89.00]
                    [71.98, 90.00]
                    [80.62, 90.50]
*%-----------------|-----------------------------------------------------------|
*#******************************************************************************
*#    Catchment MILLS
*#    - To SWM Facility north of the Jock
*#    - Primarily residental development
*#******************************************************************************
CONTINUOUS STANDHYD NHYD=["MILLS"], DT=[1]min, AREA=[175.99](ha),
                    XIMP=[0.38], TIMP=[0.38], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[74],
                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
                            LGI=[1118.123](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
```

```
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[18](hrs),   END=-1
*%-----------------|-----------------------------------------------------------|
*#*****************************************************************************
*#    Chapman Mills SWM Pond
*#    - Rating curve obtained from CCL hydraulic modeling
*#*****************************************************************************
ROUTE RESERVOIR     NHYDout=["MILL_P"],  NHYDin=["MILLS"],
                    RDT=[1](min),
                          TABLE of ( OUTFLOW-STORAGE ) values
                                      (cms) - (ha-m)
                                    [   0.0 ,  0.0 ]
                                    [   0.01 , 0.01]
                                    [   0.05 , 0.06]
                                    [   0.09 , 0.11]
                                    [   0.13 , 0.15]
                                    [   0.18 , 0.19]
                                    [   0.28 , 0.28]
                                    [   0.37 , 0.34]
                                    [   0.45 , 0.40]
                                    [   0.51 , 0.44]
                                    [   0.56 , 0.47]
                                    [   0.64 , 0.52]
                                    [   0.76 , 0.59]
                                    [   0.86 , 0.65]
                                    [   1.09 , 0.78]
                                    [   1.44 , 0.96]
                                    [   3.18 , 1.84]
                                    [   4.05 , 2.31]
                                    [   -1  ,  -1  ]  (max twenty pts)
                          NHYDovf=["MIL-OV"]
*%-----------------|-----------------------------------------------------------|
ADD HYD             NHYDsum=["SN_MI"], NHYDs to add=["N_MI"+"MIL-OV"+"MILL_P"]
*%-----------------|-----------------------------------------------------------|
SAVE HYD            NHYD=["SN_MI"],   # OF PCYCLES=[-1],  ICASEsh=[1]
                    HYD_COMMENT=["Total Flows at Jockvale Road"]
*%-----------------|-----------------------------------------------------------|
*#
*# Hydrograph from Jockvale Road routed to Heart's Desire
*# Channel X-Section obtained from RVCA Hydraulic Model - Station 689
*#
ROUTE CHANNEL       NHYDout=["N_DE"] ,NHYDin=["SN_MI"] ,
                    RDT=[1](min),
                    CHLGTH=[1962](m),  CHSLOPE=[0.2227](%),
                                        FPSLOPE=[0.2227](%),
                    SECNUM=[1.0],       NSEG=[3]
                    ( SEGROUGH, SEGDIST (m))=
                      [0.075,-17.56
                      -0.045,18.27
                      0.075,32.51] NSEG times
                    ( DISTANCE (m), ELEVATION (m))=
                    [-54.07, 85.00]
                    [-39.43, 84.50]
                    [-28.30, 84.00]
                    [-24.12, 83.50]
                    [-22.30, 83.00]
                    [-20.55, 82.50]
                    [-17.56, 82.00]
                    [-12.63, 81.22]
                    [-0.11, 80.75]
                    [11.55, 81.22]
                    [18.27, 82.00]
                    [19.82, 82.50]
                    [22.48, 83.00]
                    [27.90, 83.50]
                    [29.31, 84.00]
```

```
                    [30.81, 84.50]
                    [32.51, 85.00]
*%-----------------|-----------------------------------------------------------|
*#*****************************************************************************
*#    Catchment DESIRE
*#    - To Jock River (north of the Jock)
*#    - Rural-estate subdivision (Heart's Desire Community)
*#*****************************************************************************
CONTINUOUS STANDHYD NHYD=["DESIRE"], DT=[1]min, AREA=[23.78](ha),
                    XIMP=[0.25], TIMP=[0.25], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[77],
                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
                            LGI=[400](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[18](hrs),   END=-1
*%-----------------|-----------------------------------------------------------|
*#*****************************************************************************
*#    Catchment JOCKVA
*#    - To Jockvale SWM Facility
*#    - Residential development & golf course
*#    - JFSA 2021-01-11 update JOCKVA after updating CORRIG as per IBI GROUP, July 2008.
*#      JOCKVA area became 225.13 ha instead of 257.63 ha. JOCKVA separated into two
areas JOCKVA and EX-LAND 32.5 ha as per IBI GROUP, July 2008.
*#*****************************************************************************
CONTINUOUS STANDHYD NHYD=["JOCKVA"], DT=[1]min, AREA=[225.13](ha),
                    XIMP=[0.50], TIMP=[0.50], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[74],
                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
                            LGI=[1310.55](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[18](hrs),   END=-1
*%-----------------|-----------------------------------------------------------|
ADD HYD             NHYDsum=["JOCKVA-TO"], NHYDs to
add=["EX-LAND-MN"+"JOCKVA"+"B2-MJ"+"B3-MJ"]
*%-----------------|-----------------------------------------------------------|
SAVE HYD            NHYD=["JOCKVA-TO"],   # OF PCYCLES=[-1],  ICASEsh=[1]
                    HYD_COMMENT=["Total Flows at KB first pond"]
*%-----------------|-----------------------------------------------------------|
*#*****************************************************************************
*#    Jockvale SWM Facility
*#    - Rating curve obtained from Jockvale Servicing Study (CCL 1999)
*#*****************************************************************************
ROUTE RESERVOIR     NHYDout=["JOCK_P"],  NHYDin=["JOCKVA-TO"],
                    RDT=[1](min),
                          TABLE of ( OUTFLOW-STORAGE ) values
                                      (cms) - (ha-m)
                                    [   0.0 ,  0.0 ]
                                    [   0.27 , 0.03]
                                    [   0.28 , 0.55]
                                    [   0.29 , 1.14]
                                    [   0.30 , 1.80]
                                    [   0.31 , 2.32]
                                    [   1.12 , 2.87]
                                    [   2.92 , 3.45]
                                    [   4.64 , 4.07]
                                    [   6.69 , 4.72]
                                    [   9.02 , 5.39]
                                    [   11.62 , 6.10]
```

```
                                      [   14.42 , 6.85]
                                      [   17.45 , 7.62]
                                      [   20.69 , 8.44]
                                      [   24.08 , 9.28]
                                      [   27.68 , 10.17]
                                      [   -1  ,   -1  ]  (max twenty pts)
                            NHYDovf=["JO-OVF"]
*%-----------------|--------------------------------------------------------------|
ADD HYD               NHYDsum=["SN_DE"], NHYDs to add=["N_DE"+"DESIRE"+"JO-OVF"+"JOCK_P"]
*%-----------------|--------------------------------------------------------------|
SAVE HYD              NHYD=["SN_DE"],   # OF PCYCLES=[-1],  ICASEsh=[1]
                      HYD_COMMENT=["Total Flows at Heart's Desire"]
*%-----------------|--------------------------------------------------------------|
*#
*# Hydrograph from Heart's Desire routed to Rideau River
*# Channel X-Section obtained from RVCA Hydraulic Model - Station 0
*#
ROUTE CHANNEL         NHYDout=["N1"] ,NHYDin=["SN_DE"] ,
                      RDT=[1](min),
                      CHLGTH=[563](m),  CHSLOPE=[0.9668](%),
                                          FPSLOPE=[0.9668](%),
                      SECNUM=[1.0],       NSEG=[3]
                      ( SEGROUGH, SEGDIST (m))=
                        [0.075,-30.20
                        -0.045,30.20
                        0.075,48.48] NSEG times
                      ( DISTANCE (m), ELEVATION (m))=
                      [-98.46, 81.50]
                      [-92.24, 81.00]
                      [-86.88, 80.50]
                      [-81.54, 80.00]
                      [-74.36, 79.50]
                      [-63.54, 79.00]
                      [-39.23, 78.50]
                      [-34.51, 78.00]
                      [-33.01, 77.50]
                      [-30.20, 77.00]
                      [-13.42, 76.18]
                      [-1.14, 76.09]
                      [17.06, 76.18]
                      [30.20, 77.00]
                      [32.95, 77.50]
                      [34.06, 78.00]
                      [35.11, 78.50]
                      [36.32, 79.00]
                      [37.74, 79.50]
                      [48.48, 81.50]
*%-----------------|--------------------------------------------------------------|
*#*****************************************************************************
*#    Catchment S-2
*#    - To Jock River (north and south)
*#    - Undeveloped floodplain and river
*#*****************************************************************************
CONTINUOUS NASHYD     NHYD=["S-2"], DT=[1]min, AREA=[102.94](ha),
                      DWF=[0](cms), CN/C=[72],  IA=[4.67](mm),
                      N=[3], TP=[0.40]hrs,
                      Continuous simulation parameters:
                      IaRECper=[4](hrs),
                      SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                      InterEventTime=[12](hrs)
                      Baseflow simulation parameters:
                      BaseFlowOption=[1] ,
                      InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                      VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|--------------------------------------------------------------|
ADD HYD               NHYDsum=["SN_N1"], NHYDs to add=["N1"+"S-2"]
```

```
*%-----------------|------------------------------------------------------------|
SAVE HYD             NHYD=["SN_N1"],   # OF PCYCLES=[-1],  ICASEsh=[1]
                     HYD_COMMENT=["Total Flows at Rideau River"]
*%-----------------|------------------------------------------------------------|
*################################################################################
*%  5 yr, 24 hr SCS storm based on OTTAWA CDA IDF Curves
START                TZERO=[0.0],  METOUT=[2],  NSTORM=[1],  NRUN=[5]
*%                    ["C24SC005.stm"] <--storm filename, one per line for NSTORM time
*%-----------------|------------------------------------------------------------|
*%  10 yr, 24 hr SCS storm based on OTTAWA CDA IDF Curves
START                TZERO=[0.0],  METOUT=[2],  NSTORM=[1],  NRUN=[10]
*%                    ["C24SC010.stm"] <--storm filename, one per line for NSTORM time
*%-----------------|------------------------------------------------------------|
*%  25 yr, 24 hr SCS storm based on OTTAWA CDA IDF Curves
START                TZERO=[0.0],  METOUT=[2],  NSTORM=[1],  NRUN=[25]
*%                    ["C24SC025.stm"] <--storm filename, one per line for NSTORM time
*%-----------------|------------------------------------------------------------|
*%  50 yr, 24 hr SCS storm based on OTTAWA CDA IDF Curves
START                TZERO=[0.0],  METOUT=[2],  NSTORM=[1],  NRUN=[50]
*%                    ["C24SC050.stm"] <--storm filename, one per line for NSTORM time
*%-----------------|------------------------------------------------------------|
*%  100 yr, 3 hr Chicago storm based on OTTAWA CDA IDF Curves
*START                TZERO=[0.0],  METOUT=[2],  NSTORM=[1],  NRUN=[100]
*%                    ["100YC3H.STM"] <--storm filename, one per line for NSTORM time
*%-----------------|------------------------------------------------------------|
*%  100 yr, 24 hr SCS storm based on OTTAWA CDA IDF Curves
START                TZERO=[0.0],  METOUT=[2],  NSTORM=[1],  NRUN=[100]
*%                    ["C24SC100.stm"] <--storm filename, one per line for NSTORM time
*%-----------------|------------------------------------------------------------|
*%  100 yr, 3 hr Chicago storm based on OTTAWA CDA IDF Curves
*START                TZERO=[0.0],  METOUT=[2],  NSTORM=[1],  NRUN=[100]
*%                    ["C24SC100.stm"] <--storm filename, one per line for NSTORM time
*START                TZERO=[0.0],  METOUT=[2],  NSTORM=[1],  NRUN=[101]
*%                    ["A24SC100.stm"] <--storm filename, one per line for NSTORM time
*START                TZERO=[0.0],  METOUT=[2],  NSTORM=[1],  NRUN=[102]
*%                    ["A24SC100_60.stm"] <--storm filename, one per line for NSTORM time
FINISH
```

```
 ==================================================================================================

 SSSSS   W   W   M   M   H   H   Y   Y   M   M    OOO        222     000    11   5555   =========
 S        W W W   MM MM   H   H    Y Y    MM MM   O   O         2    0   0   11   5
 SSSSS   W W W   M M M   HHHHH     Y     M M M   O   O         2    0   0   11   5      Ver 5.500
     S    W W    M   M   H   H     Y     M   M   O   O       222    0   0   11   555    FEB  2015
 SSSSS    W W    M   M   H   H     Y     M   M    OOO        2      0   0   11     5   =========
                                                             2      0   0   11     5   # 2549237
       StormWater Management HYdrologic Model                 222    000    11   555    =========

 **************************************************************************************************
 ************************************** SWMHYMO Ver 5.500 *****************************************
 ******************  A single event and continuous hydrologic simulation model  ******************
 ******************     based on the principles of HYMO and its successors      ******************
 ******************                 OTTHYMO-83 and OTTHYMO-89.                   ******************
 **************************************************************************************************
 ****************** Distributed by:  J.F. Sabourin and Associates Inc.           ******************
 ******************                  Ottawa,  Ontario: (613) 836-3884            ******************
 ******************                  Gatineau, Quebec: (819) 243-6858            ******************
 ******************                  E-Mail: swmhymo@jfsa.Com                    ******************
 **************************************************************************************************

 ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
 ++++++++++++++++++ Licensed user: JFSAinc.                                      ++++++++++++++++++
 ++++++++++++++++++                Ottawa                SERIAL#:2549237        ++++++++++++++++++
 ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

 **************************************************************************************************
 ******************             ++++++ PROGRAM ARRAY DIMENSIONS ++++++          ******************
 ******************             Maximum value for ID numbers  :     11          ******************
 ******************             Max. number of rainfall points: 105408          ******************
 ******************             Max. number of flow points    : 105408          ******************
 **************************************************************************************************


 ********************************   S U M M A R Y   O U T P U T   ********************************
 **************************************************************************************************
 *                 RUN DATE: 2021-03-04     TIME: 11:49:14     RUN COUNTER: 002082               *
 **************************************************************************************************
 * Input   file: T:\PROJ\1474-16\Design\20201026-QuantityControlAnalysis\SWMHYMO\SMR-Model\updated*
 *               3\SMR_S-1-Fr-Nash.dat                                                             *
 * Output  file: T:\PROJ\1474-16\Design\20201026-QuantityControlAnalysis\SWMHYMO\SMR-Model\updated*
 *               3\SMR_S-1-Fr-Nash.out                                                             *
 * Summary file: T:\PROJ\1474-16\Design\20201026-QuantityControlAnalysis\SWMHYMO\SMR-Model\updated*
 *               3\SMR_S-1-Fr-Nash.sum                                                             *
 * User comments:                                                                                  *
 * 1:_____________________________________________________________________________________________*
 * 2:_____________________________________________________________________________________________*
 * 3:_____________________________________________________________________________________________*
 **************************************************************************************************


#*******************************************************************************
#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
#*******************************************************************************
#  Project Name: [Jock River]    Project Number: [1474-16]
#  Date         : 04-03-2021
#  Modeller     : [M.M.]
#  Company      : JFSAinc.
#  License #    :  2549237
#*******************************************************************************
# CALIBRATION OF SUMMER MODEL PARAMETERS
# USING CONTINUOUS SIMULATIONS
# Rainfall data from JFSA raingauge installed at site + other gauges by the City
# Use data collected from May 1st to July 14, 2003
# 2020-11-30 change TMJSTO in COMPUTE DUALHYD (TMJSTO = 0.1 instead of 0.0001)
# 2020-12-01 correct pond curve values
# 2020-12-01 change W_CLAR_BRAZ XIMP to 0.55, SLPI=[0.5](%) (impervious slope), and LGI up to 700m
# 2021-02-19 Change the slope for ROUTE CHANNEL Station 2462 (NHYDout=["N_TO"] ,NHYDin=["SN_TO"]) from 0.033 % (as per S
# 2021-02-19 Change the slope for ROUTE CHANNEL Station 5002 (NHYDout=["N_WC"] ,NHYDin=["SN_CE"]) from 0.01 % (as per St
# ------------------------------------------------------------------------------
  ** END OF RUN :     1

***************************************************************************************************





 RUN#:COMMAND#
R0002:C00001--------------------------------------------------------------------------------------
     START
      [TZERO =    .00 hrs on        0]
      [METOUT=   2    (1=imperial, 2=metric output)]
      [NSTORM=   1 ]
      [NRUN  = 0002 ]
#*******************************************************************************
#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
#*******************************************************************************
#  Project Name: [Jock River]    Project Number: [1474-16]
#  Date         : 04-03-2021
#  Modeller     : [M.M.]
#  Company      : JFSAinc.
#  License #    :  2549237
#*******************************************************************************
# CALIBRATION OF SUMMER MODEL PARAMETERS
# USING CONTINUOUS SIMULATIONS
# Rainfall data from JFSA raingauge installed at site + other gauges by the City
# Use data collected from May 1st to July 14, 2003
# 2020-11-30 change TMJSTO in COMPUTE DUALHYD (TMJSTO = 0.1 instead of 0.0001)
# 2020-12-01 correct pond curve values
# 2020-12-01 change W_CLAR_BRAZ XIMP to 0.55, SLPI=[0.5](%) (impervious slope), and LGI up to 700m
# 2021-02-19 Change the slope for ROUTE CHANNEL Station 2462 (NHYDout=["N_TO"] ,NHYDin=["SN_TO"]) from 0.033 % (as per S
# 2021-02-19 Change the slope for ROUTE CHANNEL Station 5002 (NHYDout=["N_WC"] ,NHYDin=["SN_CE"]) from 0.01 % (as per St
# ------------------------------------------------------------------------------
R0002:C00002--------------------------------------------------------------------------------------
     READ STORM
      Filename = storm.001
      Comment  = Pluie SCS de 24 hres 1:2 ans pour Ottawa CDA
      [SDT=10.00:SDUR=  24.00:PTOT=  45.51]
R0002:C00003--------------------------------------------------------------------------------------
     MODIFY STORM
      [RFACT=  1.00:TSHIFT= 960.00 min]
      [SDT=10.00:SDUR=  40.00:PTOT=  45.51]
R0002:C00004--------------------------------------------------------------------------------------
     DEFAULT VALUES
      Filename = T:\PROJ\1474-16\Design\20201026-QuantityControlAnalysis\SWMHYMO\SMR-Model\updated3\CitiGate.DEF
      ICASEdv  = 1 (read and print data)
      FileTitle= File comment: [Based onvarious calibration exercises in Onta
                 THE FOLLOWING PARAMETERS ARE USED IN THE DESIGN STANDHYD COM
      Horton's infiltration equation parameters:
      [Fo= 76.20 mm/hr] [Fc=13.20 mm/hr] [DCAY= 4.14 /hr] [F=  .00 mm]
      Parameters for PERVIOUS surfaces in STANDHYD:
      [IAper=   4.67 mm] [LGP=50.00 m] [MNP= .250]
      Parameters for IMPERVIOUS surfaces in STANDHYD:
      [IAimp=   1.57 mm] [CLI= 1.50]   [MNI= .013]
      Parameters used in NASHYD:
      [Ia=   4.67 mm] [N= 3.00]
      Average monthly Pan Evaporation data in    (mm)
   JAN   FEB   MAR   APR   MAY   JUN   JUL   AUG   SEP   OCT   NOV   DEC
   .00   .00   .00   .00   .00   .00   .00   .00   .00   .00   .00   .00
      Average monthly Potential Evapotranspiration in    (mm)
   JAN   FEB   MAR   APR   MAY   JUN   JUL   AUG   SEP   OCT   NOV   DEC
   .00   .00   .00   .00   .00   .00   .00   .00   .00   .00   .00   .00
R0002:C00005--------------------------------------------------------------------------------------
     COMPUTE API
      [APIini= 50.00: APIkdy= .8500: APIkdt= .9989]
      {APImax= 80.12: APIavg= 56.74: APImin= 44.87}
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.32
R0002:C00006------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:JR_HW       3680.00    6.204 No_date   37:06   11.47 .252     .000
      [CN= 64.0: N= 3.00: Tp= 7.13]
      [IaREC= 4.00: SMIN= 57.05: SMAX=380.32: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.32
R0002:C00007------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_13        971.00    2.187 No_date   32:37   10.75 .236     .000
      [CN= 61.0: N= 3.00: Tp= 3.76]
      [IaREC= 4.00: SMIN= 64.50: SMAX=430.01: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.80
R0002:C00008------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:JR_GWM      3074.00    3.218 No_date   39:59    9.43 .207     .000
      [CN= 55.0: N= 3.00: Tp=11.33]
      [IaREC= 4.00: SMIN= 83.24: SMAX=554.96: SK= .010]
      [InterEventTime=  12.00]
R0002:C00009------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:JR_ASH      1781.00    5.504 No_date   32:45   13.94 .306     .000
      [CN= 72.0: N= 3.00: Tp= 3.91]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
R0002:C00010------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_11        500.00    2.720 No_date   29:22   11.98 .263     .000
      [CN= 66.0: N= 3.00: Tp= 1.24]
      [IaREC= 4.00: SMIN= 52.62: SMAX=350.79: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.80
R0002:C00011------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:NN_CK       1917.00    4.042 No_date   34:34   11.98 .263     .000
      [CN= 66.0: N= 3.00: Tp= 5.29]
      [IaREC= 4.00: SMIN= 52.62: SMAX=350.79: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.52
R0002:C00012------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_10       5666.00   11.228 No_date   38:07   13.94 .306     .000
      [CN= 72.0: N= 3.00: Tp= 8.00]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.75
R0002:C00013------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:KG_CK       8376.00   11.072 No_date   39:59   11.98 .263     .000
      [CN= 66.0: N= 3.00: Tp=11.66]
      [IaREC= 4.00: SMIN= 52.62: SMAX=350.79: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.68
R0002:C00014------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_9        1132.00    4.434 No_date   30:56   13.35 .293     .000
      [CN= 70.0: N= 3.00: Tp= 2.51]
      [IaREC= 4.00: SMIN= 43.07: SMAX=287.10: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.82
R0002:C00015------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:NC_CK       4464.00    5.504 No_date   39:59   10.98 .241     .000
      [CN= 62.0: N= 3.00: Tp=11.32]
      [IaREC= 4.00: SMIN= 61.90: SMAX=412.66: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.80
R0002:C00016------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_8         131.00     .805 No_date   28:57   11.22 .247     .000
      [CN= 63.0: N= 3.00: Tp=  .90]
      [IaREC= 4.00: SMIN= 59.42: SMAX=396.11: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.65
R0002:C00017------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:HB_DR       3854.00    6.242 No_date   38:46   11.98 .263     .000
      [CN= 66.0: N= 3.00: Tp= 8.42]
      [IaREC= 4.00: SMIN= 52.62: SMAX=350.79: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.82
R0002:C00018------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_7        3197.00    4.651 No_date   36:31    9.85 .217     .000
      [CN= 57.0: N= 3.00: Tp= 6.65]
      [IaREC= 4.00: SMIN= 76.32: SMAX=508.81: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.75
R0002:C00019------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_6         165.00     .413 No_date   33:07   12.24 .269     .000
      [CN= 67.0: N= 3.00: Tp= 4.18]
      [IaREC= 4.00: SMIN= 50.55: SMAX=336.97: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.67
R0002:C00020------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:VG_DR       1332.00    3.148 No_date   35:23   13.94 .306     .000
      [CN= 72.0: N= 3.00: Tp= 5.95]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
R0002:C00021------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_5         224.00    2.597 No_date   28:45   15.91 .350     .000
      [CN= 77.0: N= 3.00: Tp=  .75]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.20
R0002:C00022------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:FL_CK       4945.00   14.839 No_date   33:25   14.57 .320     .000
      [CN= 74.0: N= 3.00: Tp= 4.45]
      [IaREC= 4.00: SMIN= 36.67: SMAX=244.49: SK= .010]
      [InterEventTime=  12.00]
R0002:C00023------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_5A2        20.00     .309 No_date   28:36   17.79 .391     .000
      [CN= 81.0: N= 3.00: Tp=  .62]
      [IaREC= 4.00: SMIN= 25.21: SMAX=168.09: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.61
R0002:C00024------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_5A1      1412.00    3.090 No_date   38:04   15.22 .334     .000
      [CN= 75.0: N= 3.00: Tp= 8.00]
      [IaREC= 4.00: SMIN= 33.81: SMAX=225.43: SK= .010]
      [InterEventTime=  12.00]
R0002:C00025------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_4         585.00    4.325 No_date   29:58   17.79 .391     .000
      [CN= 81.0: N= 3.00: Tp= 1.75]
      [IaREC= 4.00: SMIN= 25.21: SMAX=168.09: SK= .010]
      [InterEventTime=  12.00]
R0002:C00026------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:LM_CK       1021.00    5.747 No_date   30:50   17.39 .382     .000
      [CN= 80.0: N= 3.00: Tp= 2.46]
      [IaREC= 4.00: SMIN= 26.32: SMAX=175.50: SK= .010]
      [InterEventTime=  12.00]
R0002:C00027------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_2         177.00    2.052 No_date   28:45   15.91 .350     .000
      [CN= 77.0: N= 3.00: Tp=  .75]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0002:C00028------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SM_DR       1122.00    5.337 No_date   31:50   17.79 .391     .000
      [CN= 81.0: N= 3.00: Tp= 3.25]
      [IaREC= 4.00: SMIN= 25.21: SMAX=168.09: SK= .010]
      [InterEventTime=  12.00]
R0002:C00029------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:MO_DR       2737.00   11.528 No_date   31:35   15.56 .342     .000
      [CN= 76.0: N= 3.00: Tp= 3.03]
      [IaREC= 4.00: SMIN= 32.46: SMAX=216.39: SK= .010]
      [InterEventTime=  12.00]
#
# Routing hydrographs
#
# Starting with the addition of Jock River Headwater and Subwatershed 13
#
R0002:C00030------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:JR_HW       3680.00    6.204 No_date   37:06   11.47  n/a     .000
                    +     1.0 02:SW_13        971.00    2.187 No_date   32:37   10.75  n/a     .000
                 SUM=     1.0 01:S_N13       4651.00    7.871 No_date   35:37   11.32  n/a     .000
#
# Sum of hydrographs from Node 13 routed to Node 13A
# (Approximated cross-section - see cross-section 258)
# Use n=0.04 for summer conditions and n=0.025 for spring conditions
#
R0002:C00031------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N13       4651.00    7.871 No_date   35:37   11.32  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N13A        4651.00    6.258 No_date   39:59   11.32  n/a     .000
      [L/S/n= 9074./ .022/.040]
      {Vmax=  .429:Dmax= 2.557}
#
# Addition of Subwatershed Jock River at Goodwood Marsh to Node 13A
#
R0002:C00032------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N13A        4651.00    6.258 No_date   39:59   11.32  n/a     .000
                    +     1.0 02:JR_GWM      3074.00    3.218 No_date   39:59    9.43  n/a     .000
                 SUM=     1.0 01:SN13A       7725.00    9.475 No_date   39:59   10.57  n/a     .000
#
# Insertion of a reservoir to simulate the effects of the Goodwood Marsh
#
R0002:C00033------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:SN13A       7725.00    9.475 No_date   39:59   10.57  n/a     .000
                out <=    1.0 01:RES_GM      7725.00    2.619 No_date   55:07   10.57  n/a     .000
     {MxStoUsed=.3585E+02  m3}
#
R0002:C00034------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:RES_GM      7725.00    2.619 No_date   55:07   10.57  n/a     .000
      fname :H_RESGM
      remark:Outflow from Res GM
# Output of Reservoir Goodwood Marsh routed from Node 13A to Node 12
# (Approximated cross-section - see cross-section 258)
# Use n=0.04 for summer conditions and n=0.025 for spring conditions
R0002:C00035------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:RES_GM      7725.00    2.619 No_date   55:07   10.57  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N12         7725.00    2.609 No_date   58:09   10.57  n/a     .000
      [L/S/n= 5926./ .076/.040]
      {Vmax=  .501:Dmax= 1.329}
#
# Addition of Subwatershed Jock River at Ashton to Node 12
#
R0002:C00036------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N12         7725.00    2.609 No_date   58:08   10.57  n/a     .000
                    +     1.0 02:JR_ASH      1781.00    5.504 No_date   32:45   13.94  n/a     .000
                 SUM=     1.0 01:S_N12       9506.00    7.458 No_date   32:50   11.20  n/a     .000
R0002:C00037------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:S_N12       9506.00    7.458 No_date   32:50   11.20  n/a     .000
      fname :H_SN12
      remark:flow at S_N12 near Ashton
#
# Sum of hydrographs from Node 12 routed to Node 11
# (Approximated cross-section - see cross-section 258)
# Use n=0.04 for summer conditions and n=0.025 for spring conditions
#
# Sum of hydrographs from Node 12 routed to Node 11 with Dummy section 248
#
R0002:C00038------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N12       9506.00    7.458 No_date   32:50   11.20  n/a     .000
     [RDT= 1.00] out<-    1.0 01:Dum11       9506.00    7.379 No_date   33:12   11.20  n/a     .000
      [L/S/n=  972./ .054/.040]
      {Vmax=  .591:Dmax= 2.108}
#
# Addition of Subwatershed 11 and No Name Creek to Node 11
```

```
#
R0002:C00039------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              1.0 02:Dum11        9506.00    7.379 No_date   33:12   11.20  n/a     .000
                  +      1.0 02:SW_11         500.00    2.720 No_date   29:22   11.98  n/a     .000
                  +      1.0 02:NN_CK        1917.00    4.042 No_date   34:34   11.98  n/a     .000
               SUM=      1.0 01:S_N11       11923.00   12.077 No_date   33:14   11.36  n/a     .000
#
# Sum of hydrographs from Node 11 routed to Node 10
# Section 1
#
R0002:C00040------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->   1.0 02:S_N11       11923.00   12.077 No_date   33:14   11.36  n/a     .000
     [RDT= 1.00] out<-   1.0 01:N10         11923.00    8.276 No_date   39:46   11.36  n/a     .000
      [L/S/n=14028./ .157/.040]
      {Vmax=  .462:Dmax=  .886}
#
# Addition of Subwatershed 10 to Node 10
#
R0002:C00041------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              1.0 02:N10         11923.00    8.276 No_date   39:46   11.36  n/a     .000
                  +      1.0 02:SW_10        5666.00   11.228 No_date   38:07   13.94  n/a     .000
               SUM=      1.0 01:S_N10       17589.00   19.451 No_date   38:31   12.19  n/a     .000
R0002:C00042------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD             1.0 01:S_N10       17589.00   19.451 No_date   38:31   12.19  n/a     .000
      fname :H_SN10
      remark:flow at S_N10: N10 + SW_10
# Addition of Kings Creek to S_N10
#
R0002:C00043------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              1.0 02:S_N10       17589.00   19.451 No_date   38:31   12.19  n/a     .000
                  +      1.0 02:KG_CK        8376.00   11.072 No_date   39:59   11.98  n/a     .000
               SUM=      1.0 01:S_N10A      25965.00   30.328 No_date   39:58   12.12  n/a     .000
#
# Sum of hydrographs from Node 10 routed to Node 9
# Section 2
#
R0002:C00044------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->   1.0 02:S_N10A      25965.00   30.328 No_date   39:58   12.12  n/a     .000
     [RDT= 1.00] out<-   1.0 01:N9          25965.00   29.579 No_date   39:59   12.12  n/a     .000
      [L/S/n= 3982./ .075/.040]
      {Vmax=  .595:Dmax= 1.208}
#
# Addition of Subwatershed 9 and Nichols Creek to Node 9
#
R0002:C00045------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              1.0 02:N9          25965.00   29.579 No_date   39:59   12.12  n/a     .000
                  +      1.0 02:SW_9         1132.00    4.434 No_date   30:56   13.35  n/a     .000
                  +      1.0 02:NC_CK        4464.00    5.504 No_date   39:59   10.98  n/a     .000
               SUM=      1.0 01:S_N9        31561.00   36.313 No_date   39:59   12.00  n/a     .000
#
# Sum of hydrographs from Node 9 routed to Node 8
# Section 3
#
R0002:C00046------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->   1.0 02:S_N9        31561.00   36.313 No_date   39:59   12.00  n/a     .000
     [RDT= 1.00] out<-   1.0 01:N8          31561.00   34.173 No_date   39:59   12.00  n/a     .000
      [L/S/n= 2269./ .088/.045]
      {Vmax=  .418:Dmax= 1.281}
#
# Addition of Subwatershed 8 and Hobb's Drain to Node 8
#
R0002:C00047------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              1.0 02:N8          31561.00   34.173 No_date   39:59   12.00  n/a     .000
                  +      1.0 02:SW_8          131.00     .805 No_date   28:57   11.22  n/a     .000
                  +      1.0 02:HB_DR        3854.00    6.242 No_date   38:46   11.98  n/a     .000
               SUM=      1.0 01:S_N8        35546.00   40.474 No_date   39:59   12.00  n/a     .000
#
# Sum of hydrographs from Node 8 routed to Node 7
# Section 4
#
R0002:C00048------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->   1.0 02:S_N8        35546.00   40.474 No_date   39:59   12.00  n/a     .000
     [RDT= 1.00] out<-   1.0 01:N7          35546.00   32.891 No_date   44:30   12.00  n/a     .000
      [L/S/n= 3750./ .053/.070]
      {Vmax=  .208:Dmax= 1.651}
#
# Addition of Subwatershed 7 to Node 7
#
R0002:C00049------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              1.0 02:N7          35546.00   32.891 No_date   44:30   12.00  n/a     .000
                  +      1.0 02:SW_7         3197.00    4.651 No_date   36:31    9.85  n/a     .000
               SUM=      1.0 01:S_N7        38743.00   35.071 No_date   43:33   11.82  n/a     .000
R0002:C00050------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD             1.0 01:S_N7        38743.00   35.071 No_date   43:33   11.82  n/a     .000
      fname :H_SN7
      remark:flow at S_N7: N7 + SW_7
# Insertion of a reservoir to simulate the effects of the Richmond Fen.
# Storage area and volumes were estimated from available topo maps.
# Release rate from fen was assumed to be controlled by the downstream
# river cross-section for summer conditions.  It is was assumed that for up to
# 0.75 m of water, the main channel of the river provided the storage.  Above
# this depth, the wetland starts to signigicantly store water.
#
R0002:C00051------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->   1.0 02:S_N7        38743.00   35.071 No_date   43:33   11.82  n/a     .000
               out <=    1.0 01:RES_RF      38743.00   23.265 No_date   55:09   11.82  n/a     .000
     {MxStoUsed=.7801E+02  m3}
R0002:C00052------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD             1.0 01:RES_RF      38743.00   23.265 No_date   55:09   11.82  n/a     .000
      fname :H_ResRF
      remark:outflow of Richmond Fen
#
# Sum of hydrographs from Node 7 routed to Node 6
# Section 5
#
R0002:C00053------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->   1.0 02:RES_RF      38743.00   23.265 No_date   55:09   11.82  n/a     .000
     [RDT= 1.00] out<-   1.0 01:N6          38743.00   23.228 No_date   56:38   11.82  n/a     .000
      [L/S/n= 3056./ .082/.025]
      {Vmax=  .432:Dmax=  .808}
#
# Addition of Subwatershed 6 and Van Gaal Drain to Node 6
#
R0002:C00054------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              1.0 02:N6          38743.00   23.228 No_date   56:38   11.82  n/a     .000
                  +      1.0 02:SW_6          165.00     .413 No_date   33:07   12.24  n/a     .000
                  +      1.0 02:VG_DR        1332.00    3.148 No_date   35:23   13.94  n/a     .000
               SUM=      1.0 01:S_N6        40240.01   23.318 No_date   39:59   11.89  n/a     .000
#
# Sum of hydrographs from Node 6 routed to Node 5
# Section 6
#
R0002:C00055------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->   1.0 02:S_N6        40240.01   23.318 No_date   39:59   11.89  n/a     .000
     [RDT= 1.00] out<-   1.0 01:N5          40240.01   23.285 No_date   56:09   11.89  n/a     .000
      [L/S/n= 1852./ .054/.035]
      {Vmax=  .378:Dmax=  .917}
#
# Addition of Subwatershed 5 and Flowing Creek to Node 5
#
R0002:C00056------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              1.0 02:N5          40240.01   23.285 No_date   56:09   11.89  n/a     .000
                  +      1.0 02:SW_5          224.00    2.597 No_date   28:45   15.91  n/a     .000
                  +      1.0 02:FL_CK        4945.00   14.839 No_date   33:25   14.57  n/a     .000
               SUM=      1.0 01:S_N5        45409.01   33.166 No_date   37:08   12.20  n/a     .000
#
# Sum of hydrographs from Node 5 routed to Node 5A
# Section 7
#
R0002:C00057------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->   1.0 02:S_N5        45409.01   33.166 No_date   37:08   12.20  n/a     .000
     [RDT= 1.00] out<-   1.0 01:N5A         45409.01   33.135 No_date   37:20   12.20  n/a     .000
      [L/S/n=  556./ .090/.040]
      {Vmax=  .443:Dmax=  .937}
#
# Addition of Subwatershed 5A1 and Subwatershed 5A2 to Node 5A
#
R0002:C00058------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              1.0 02:N5A         45409.01   33.135 No_date   37:20   12.20  n/a     .000
                  +      1.0 02:SW_5A2         20.00     .309 No_date   28:36   17.79  n/a     .000
                  +      1.0 02:SW_5A1       1412.00    3.090 No_date   38:04   15.22  n/a     .000
               SUM=      1.0 01:S_N5A       46841.01   36.236 No_date   37:28   12.30  n/a     .000
#
# Sum of hydrographs from Node 5A routed to Node 4
# Section 8
#
R0002:C00059------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->   1.0 02:S_N5A       46841.01   36.236 No_date   37:28   12.30  n/a     .000
     [RDT= 1.00] out<-   1.0 01:N4          46841.01   35.288 No_date   39:22   12.30  n/a     .000
      [L/S/n= 4630./ .043/.035]
      {Vmax=  .695:Dmax= 2.844}
#
# Addition of Subwatershed 4 and Leamy Creek to Node 4
#
R0002:C00060------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              1.0 02:N4          46841.01   35.288 No_date   39:22   12.30  n/a     .000
                  +      1.0 02:SW_4          585.00    4.325 No_date   29:58   17.79  n/a     .000
                  +      1.0 02:LM_CK        1021.00    5.747 No_date   30:50   17.39  n/a     .000
               SUM=      1.0 01:S_N4        48447.00   37.581 No_date   38:13   12.47  n/a     .000
R0002:C00061------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD             1.0 01:S_N4        48447.00   37.581 No_date   38:13   12.47  n/a     .000
      fname :S_N4.0002
      remark:flow at S_N4
#
# Sum of hydrographs from Node 4 routed to Node 2
# Section 9
#
R0002:C00062------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->   1.0 02:S_N4        48447.00   37.581 No_date   38:13   12.47  n/a     .000
     [RDT= 1.00] out<-   1.0 01:N2          48447.00   37.455 No_date   38:49   12.47  n/a     .000
      [L/S/n= 1667./ .060/.040]
      {Vmax=  .715:Dmax= 2.845}
#
# Addition of Subwatershed 2 with Monohan Drain and Smith Drain to Node 2
#
R0002:C00063------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              1.0 02:N2          48447.00   37.455 No_date   38:49   12.47  n/a     .000
                  +      1.0 02:SW_2          177.00    2.052 No_date   28:45   15.91  n/a     .000
                  +      1.0 02:SM_DR        1122.00    5.337 No_date   31:50   17.79  n/a     .000
                  +      1.0 02:MO_DR        2737.00   11.528 No_date   31:35   15.56  n/a     .000
               SUM=      1.0 01:S_N2        52483.00   46.294 No_date   33:33   12.76  n/a     .000
R0002:C00064------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD             1.0 01:S_N2        52483.00   46.294 No_date   33:33   12.76  n/a     .000
      fname :H_SN2
      remark:flow at S_N2 Jock River Gauge at Moodie Dr.
#
# Sum of hydrographs from Node 2 routed to Node 1
# Section 10
#
#****************************************************************************
#
# Hydrograph from Node 2 routed to Node 416
# Channel X-Section obtained from RVCA Hydraulic Model - Station 9025
#
R0002:C00065------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->   1.0 02:S_N2        52483.00   46.294 No_date   33:33   12.76  n/a     .000
     [RDT= 1.00] out<-   1.0 01:N_416       52483.00   45.431 No_date   35:37   12.76  n/a     .000
      [L/S/n= 2327./ .050/.055]
      {Vmax=  .577:Dmax= 2.212}
#****************************************************************************
#    Catchment SW-1a
#    - Portion of RVCA catchment SW_1 outside of Reach 1 subwatershed
#    - Undeveloped agricultural land
#****************************************************************************
R0002:C00066------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    1.0 01:SW_1a         536.42    1.885 No_date   31:21   13.01 .286     .000
      [CN= 72.0: N= 3.00: Tp= 2.79]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
R0002:C00067------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    1.0 01:S-1-Okeefe     44.93     .373 No_date   29:09   14.83 .326     .000
      [CN= 77.0: N= 3.00: Tp= 1.05]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0002:C00068------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              1.0 02:N_416       52483.00   45.431 No_date   35:37   12.76  n/a     .000
                  +      1.0 02:SW_1a         536.42    1.885 No_date   31:21   13.01  n/a     .000
                  +      1.0 02:S-1-Okeefe     44.93     .373 No_date   29:09   14.83  n/a     .000
               SUM=      1.0 01:SN_416      53064.36   46.600 No_date   35:24   12.76  n/a     .000
R0002:C00069------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD             1.0 01:SN_416      53064.36   46.600 No_date   35:24   12.76  n/a     .000
      fname :SN_416.0002
      remark:Total Flows at Highway 416
#
# Hydrograph from Node 416 routed to Node at Okeefe drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 7245
#
R0002:C00070------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->   1.0 02:SN_416      53064.36   46.600 No_date   35:24   12.76  n/a     .000
     [RDT= 1.00] out<-   1.0 01:N_OK        53064.36   46.592 No_date   35:24   12.76  n/a     .000
      [L/S/n=  497./ .302/.055]
      {Vmax= 1.190:Dmax= 1.879}
#****************************************************************************
#    Catchment OKEEFE
#    - To O'Keefe drain (north of the Jock)
#    - Developed with assumed 43% imp.
#    - 2020-12-01 add Okeefe model (Area 513.02 HA) instead of current Okeefe (Area 513.02 HA)
#    - 2020-11-20 Okeefe detailed model was added as per the NOVATECH SWMHYMO model (Citi-Gate 2014).
#****************************************************************************
R0002:C00071------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    1.0 01:O-1            63.72     .305 No_date   28:59    9.62 .211     .000
      [CN= 61.0: N= 3.00: Tp=  .90]
      [IaREC= 4.00: SMIN= 64.50: SMAX=430.01: SK= .010]
      [InterEventTime=  12.00]
R0002:C00072------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->   1.0 02:O-1            63.72     .305 No_date   28:59    9.62  n/a     .000
     [RDT= 1.00] out<-   1.0 01:O-1R           63.72     .272 No_date   29:20    9.62  n/a     .000
      [L/S/n=  960./ .630/.043]
      {Vmax=  .589:Dmax=  .212}
R0002:C00073------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    1.0 01:O-2            28.61     .110 No_date   29:14    9.11 .200     .000
      [CN= 57.0: N= 3.00: Tp= 1.10]
      [IaREC= 4.00: SMIN= 76.32: SMAX=508.81: SK= .010]
      [InterEventTime=  12.00]
R0002:C00074------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    1.0 01:O-4            46.94     .126 No_date   29:02    7.06 .155     .000
      [CN= 49.0: N= 3.00: Tp=  .90]
      [IaREC= 4.00: SMIN=104.59: SMAX=697.25: SK= .010]
      [InterEventTime=  12.00]
R0002:C00075------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              1.0 02:O-1R           63.72     .272 No_date   29:20    9.62  n/a     .000
                  +      1.0 02:O-2            28.61     .110 No_date   29:14    9.11  n/a     .000
                  +      1.0 02:O-4            46.94     .126 No_date   29:02    7.06  n/a     .000
               SUM=      1.0 01:OKF-N         139.27     .504 No_date   29:15    8.65  n/a     .000
R0002:C00076------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->   1.0 02:OKF-N         139.27     .504 No_date   29:15    8.65  n/a     .000
     [RDT= 1.00] out<-   1.0 01:OKF-NR        139.27     .502 No_date   29:20    8.65  n/a     .000
      [L/S/n=  210./ .810/.043]
      {Vmax=  .722:Dmax=  .437}
R0002:C00077------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    1.0 01:O-6            16.46     .042 No_date   28:47    6.40 .141     .000
      [CN= 43.0: N= 3.00: Tp=  .70]
      [IaREC= 4.00: SMIN=134.47: SMAX=896.47: SK= .010]
      [InterEventTime=  12.00]
R0002:C00078------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD  1.0 01:O-3            39.67     .402 No_date   28:28   11.03 .242     .000
      [XIMP=.15:TIMP=.30]
      [LOSS= 2 :CN= 50.0]
      [Pervious     area: IAper= 4.67:SLPP= .32:LGP= 440.:MNP=.035:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .32:LGI=1880.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 99.77: SMAX=665.12: SK= .010]
R0002:C00079------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD  1.0 01:O-5            60.63     .937 No_date   28:10   12.08 .265     .000
      [XIMP=.13:TIMP=.26]
      [LOSS= 2 :CN= 61.0]
      [Pervious     area: IAper= 4.67:SLPP=1.38:LGP= 550.:MNP=.035:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.38:LGI=1450.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 64.50: SMAX=430.01: SK= .010]
R0002:C00080------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              1.0 02:OKF-NR        139.27     .502 No_date   29:20    8.65  n/a     .000
                  +      1.0 02:O-3            39.67     .402 No_date   28:28   11.03  n/a     .000
                  +      1.0 02:O-5            60.63     .937 No_date   28:10   12.08  n/a     .000
                  +      1.0 02:O-6            16.46     .042 No_date   28:47    6.40  n/a     .000
               SUM=      1.0 01:PT1           256.03    1.441 No_date   28:30    9.69  n/a     .000
R0002:C00081------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    1.0 01:O-7             5.28     .024 No_date   28:38    8.02 .176     .000
      [CN= 54.0: N= 3.00: Tp=  .60]
      [IaREC= 4.00: SMIN= 87.01: SMAX=580.07: SK= .010]
      [InterEventTime=  12.00]
R0002:C00082------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              1.0 02:PT1           256.03    1.441 No_date   28:30    9.69  n/a     .000
                  +      1.0 02:O-7             5.28     .024 No_date   28:38    8.02  n/a     .000
               SUM=      1.0 01:FF            261.31    1.465 No_date   28:30    9.65  n/a     .000
R0002:C00083------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->   1.0 02:FF            261.31    1.465 No_date   28:30    9.65  n/a     .000
     [RDT= 1.00] out<-   1.0 01:DRAIN1        261.31    1.446 No_date   28:36    9.65  n/a     .000
      [L/S/n=  302./1.000/.043]
      {Vmax=  .953:Dmax=  .543}
R0002:C00084------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    1.0 01:D1              1.17     .026 No_date   28:12   15.66 .344     .000
      [CN= 84.0: N= 3.00: Tp=  .28]
      [IaREC= 4.00: SMIN= 21.09: SMAX=140.62: SK= .010]
      [InterEventTime=  12.00]
R0002:C00085------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD  1.0 01:A1              2.50     .256 No_date   28:01   34.35 .755     .000
      [XIMP=.68:TIMP=.85]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 224.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00086------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->   1.0 02:A1              2.50     .256 No_date   28:01   34.35  n/a     .000
               out <=    1.0 01:A1-STR          2.50     .048 No_date   28:35   34.35  n/a     .000
          overflow <=    1.0 03:A1-OVF           .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.4261E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00087------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD  1.0 01:ST-2             .59     .044 No_date   28:00   25.32 .556     .000
      [XIMP=.46:TIMP=.57]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 109.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00088------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->   1.0 02:ST-2             .59     .044 No_date   28:00   25.32  n/a     .000
               out <=    1.0 01:ST2STR           .59     .041 No_date   28:02   25.32  n/a     .000
          overflow <=    1.0 03:ST2OVF           .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.7924E-03  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00089------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    1.0 01:O-8            60.55     .405 No_date   29:05   12.46 .274     .000
      [CN= 69.0: N= 3.00: Tp= 1.00]
      [IaREC= 4.00: SMIN= 44.82: SMAX=298.82: SK= .010]
      [InterEventTime=  12.00]
R0002:C00090------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->   1.0 02:O-8            60.55     .405 No_date   29:05   12.46  n/a     .000
     [RDT= 1.00] out<-   1.0 01:O8PIPE         60.55     .402 No_date   29:10   12.46  n/a     .000
      [L/S/n=  335./ .100/.013]
      {Vmax=  .842:Dmax=  .265}
      {HGTH= 1.20:WDTH= 1.80}
R0002:C00091------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              1.0 02:DRAIN1        261.31    1.446 No_date   28:36    9.65  n/a     .000
                  +      1.0 02:D1              1.17     .026 No_date   28:12   15.66  n/a     .000
                  +      1.0 02:A1-STR          2.50     .048 No_date   28:35   34.35  n/a     .000
                  +      1.0 02:A1-OVF           .00     .000 No_date    0:00     .00  n/a     .000
                  +      1.0 02:ST2STR           .59     .041 No_date   28:02   25.32  n/a     .000
                  +      1.0 02:ST2OVF           .00     .000 No_date    0:00     .00  n/a     .000
                  +      1.0 02:O8PIPE         60.55     .402 No_date   29:10   12.46  n/a     .000
               SUM=      1.0 01:ST2-IN        326.12    1.834 No_date   28:39   10.41  n/a     .000
R0002:C00092------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD  1.0 01:A7              3.51     .348 No_date   28:02   34.35 .755     .000
      [XIMP=.68:TIMP=.85]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
```

```
       [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 265.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00093------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:A7              3.51      .348 No_date   28:02   34.35  n/a      .000
                out <=    1.0 01:A7-STR          3.51      .067 No_date   28:36   34.35  n/a      .000
           overflow <=    1.0 03:A7-OVF           .00      .000 No_date    0:00     .00  n/a      .000
      {MxStoUsed=.6002E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00094------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:ST-3             .71      .053 No_date   28:00   25.32 .556      .000
       [XIMP=.46:TIMP=.57]
       [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
       [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 119.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00095------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:ST-3             .71      .053 No_date   28:00   25.32  n/a      .000
                out <=    1.0 01:ST3STR           .71      .050 No_date   28:02   25.32  n/a      .000
           overflow <=    1.0 03:ST3OVF           .00      .000 No_date    0:00     .00  n/a      .000
      {MxStoUsed=.7947E-03  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00096------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:ST2-IN        326.12     1.834 No_date   28:39   10.41  n/a      .000
                    +     1.0 02:A7-STR          3.51      .067 No_date   28:36   34.35  n/a      .000
                    +     1.0 02:A7-OVF           .00      .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:ST3STR           .71      .050 No_date   28:02   25.32  n/a      .000
                    +     1.0 02:ST3OVF           .00      .000 No_date    0:00     .00  n/a      .000
                 SUM=     1.0 01:PT2ST3        330.34     1.912 No_date   28:38   10.70  n/a      .000
R0002:C00097------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:PT2ST3        330.34     1.912 No_date   28:38   10.70  n/a      .000
     [RDT= 1.00] out<-    1.0 01:DRAIN2        330.34     1.821 No_date   28:57   10.70  n/a      .000
       [L/S/n=  592./ .230/.043]
       {Vmax=  .681:Dmax=  .785}
R0002:C00098------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:D2              2.28      .021 No_date   29:07   15.66 .344      .000
       [CN= 84.0: N= 3.00: Tp=  .99]
       [IaREC= 4.00: SMIN= 21.09: SMAX=140.62: SK= .010]
       [InterEventTime=  12.00]
R0002:C00099------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A17            12.04     1.030 No_date   28:04   34.35 .755      .000
       [XIMP=.68:TIMP=.85]
       [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
       [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 491.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00100------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:A17            12.04     1.030 No_date   28:04   34.35  n/a      .000
                out <=    1.0 01:A17STR         12.04      .220 No_date   28:42   34.35  n/a      .000
           overflow <=    1.0 03:A17OVF           .00      .000 No_date    0:00     .00  n/a      .000
      {MxStoUsed=.2030E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00101------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:ST-4             .35      .027 No_date   28:00   25.32 .556      .000
       [XIMP=.46:TIMP=.57]
       [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
       [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=  84.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00102------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:ST-4             .35      .027 No_date   28:00   25.32  n/a      .000
                out <=    1.0 01:ST4STR           .35      .023 No_date   28:03   25.32  n/a      .000
           overflow <=    1.0 03:ST4OVF           .00      .000 No_date    0:00     .00  n/a      .000
      {MxStoUsed=.7487E-03  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00103------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A18             5.30      .500 No_date   28:03   34.35 .755      .000
       [XIMP=.68:TIMP=.85]
       [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
       [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 326.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00104------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:A18             5.30      .500 No_date   28:03   34.35  n/a      .000
                out <=    1.0 01:A18STR          5.30      .099 No_date   28:38   34.35  n/a      .000
           overflow <=    1.0 03:A18OVF           .00      .000 No_date    0:00     .00  n/a      .000
      {MxStoUsed=.9042E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00105------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:DRAIN2        330.34     1.821 No_date   28:57   10.70  n/a      .000
                    +     1.0 02:D2              2.28      .021 No_date   29:07   15.66  n/a      .000
                    +     1.0 02:A17STR         12.04      .220 No_date   28:42   34.35  n/a      .000
                    +     1.0 02:A17OVF           .00      .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:ST4STR           .35      .023 No_date   28:03   25.32  n/a      .000
                    +     1.0 02:ST4OVF           .00      .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:A18STR          5.30      .099 No_date   28:38   34.35  n/a      .000
                    +     1.0 02:A18OVF           .00      .000 No_date    0:00     .00  n/a      .000
                 SUM=     1.0 01:PT3ST4        350.31     2.146 No_date   28:54   11.92  n/a      .000
R0002:C00106------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:PT3ST4        350.31     2.146 No_date   28:54   11.92  n/a      .000
     [RDT= 1.00] out<-    1.0 01:DRAIN3        350.31     2.088 No_date   29:08   11.92  n/a      .000
       [L/S/n=  525./ .230/.043]
       {Vmax=  .707:Dmax=  .833}
R0002:C00107------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:D3              2.51      .033 No_date   28:46   17.40 .382      .000
       [CN= 86.0: N= 3.00: Tp=  .73]
       [IaREC= 4.00: SMIN= 17.43: SMAX=116.21: SK= .010]
       [InterEventTime=  12.00]
R0002:C00108------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:C1              3.41      .339 No_date   28:02   34.35 .755      .000
       [XIMP=.68:TIMP=.85]
       [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
       [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 261.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00109------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:C1              3.41      .339 No_date   28:02   34.35  n/a      .000
                out <=    1.0 01:C1-STR          3.41      .065 No_date   28:36   34.35  n/a      .000
           overflow <=    1.0 03:C1-OVF           .00      .000 No_date    0:00     .00  n/a      .000
      {MxStoUsed=.5806E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00110------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:ST-5             .45      .034 No_date   28:00   25.32 .556      .000
       [XIMP=.46:TIMP=.57]
       [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
       [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=  95.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00111------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:ST-5             .45      .034 No_date   28:00   25.32  n/a      .000
                out <=    1.0 01:ST5STR           .45      .031 No_date   28:03   25.32  n/a      .000
           overflow <=    1.0 03:ST5OVF           .00      .000 No_date    0:00     .00  n/a      .000
      {MxStoUsed=.7682E-03  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00112------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:DRAIN3        350.31     2.088 No_date   29:08   11.92  n/a      .000
                    +     1.0 02:D3              2.51      .033 No_date   28:46   17.40  n/a      .000
                    +     1.0 02:C1-STR          3.41      .065 No_date   28:36   34.35  n/a      .000
                    +     1.0 02:C1-OVF           .00      .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:ST5STR           .45      .031 No_date   28:03   25.32  n/a      .000
                    +     1.0 02:ST5OVF           .00      .000 No_date    0:00     .00  n/a      .000
                 SUM=     1.0 01:ST5-E         356.68     2.174 No_date   29:07   12.19  n/a      .000
R0002:C00113------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:STRAND          7.59      .471 No_date   28:13   33.47 .735      .000
       [XIMP=.64:TIMP=.85]
       [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
       [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1230.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00114------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:STRAND          7.59      .471 No_date   28:13   33.47  n/a      .000
                out <=    1.0 01:S-POND          7.59      .032 No_date   30:14   33.47  n/a      .000
           overflow <=    1.0 03:S-OVF            .00      .000 No_date    0:00     .00  n/a      .000
      {MxStoUsed=.1805E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00115------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:ST5-E         356.68     2.174 No_date   29:07   12.19  n/a      .000
                    +     1.0 02:S-POND          7.59      .032 No_date   30:14   33.47  n/a      .000
                    +     1.0 02:S-OVF            .00      .000 No_date    0:00     .00  n/a      .000
                 SUM=     1.0 01:SSAOUT        364.27     2.204 No_date   29:07   12.63  n/a      .000
R0002:C00116------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SSAOUT        364.27     2.204 No_date   29:07   12.63  n/a      .000
       fname :SSAOUT.0002
       remark:SSAOUT
R0002:C00117------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:Area-A         66.75     3.902 No_date   28:13   32.66 .718      .000
       [XIMP=.64:TIMP=.80]
       [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
       [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1155.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00118------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:Area-A         66.75     3.902 No_date   28:13   32.66  n/a      .000
       fname :Area-A.0002
       remark:SMWF-A Inflow
R0002:C00119------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:Area-A         66.75     3.902 No_date   28:13   32.66  n/a      .000
                out <=    1.0 01:SWMF-A         66.75      .126 No_date   32:26   32.66  n/a      .000
           overflow <=    1.0 03:SWMAOV           .00      .000 No_date    0:00     .00  n/a      .000
      {MxStoUsed=.1708E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00120------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SWMF-A         66.75      .126 No_date   32:26   32.66  n/a      .000
       fname :SWMF-A.0002
       remark:SMWF-A Outflow
R0002:C00121------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:SSAOUT        364.27     2.204 No_date   29:07   12.63  n/a      .000
                    +     1.0 02:SWMF-A         66.75      .126 No_date   32:26   32.66  n/a      .000
                    +     1.0 02:SWMAOV           .00      .000 No_date    0:00     .00  n/a      .000
                 SUM=     1.0 01:PT4ST5        431.02     2.323 No_date   29:07   15.73  n/a      .000
R0002:C00122------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:C6              1.87      .196 No_date   28:01   34.35 .755      .000
       [XIMP=.68:TIMP=.85]
       [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
       [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 193.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00123------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:C6              1.87      .196 No_date   28:01   34.35  n/a      .000
                out <=    1.0 01:C6-STR          1.87      .036 No_date   28:34   34.35  n/a      .000
           overflow <=    1.0 03:C6-OVF           .00      .000 No_date    0:00     .00  n/a      .000
      {MxStoUsed=.3218E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00124------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:C7              1.62      .171 No_date   28:01   34.35 .755      .000
       [XIMP=.68:TIMP=.85]
       [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
       [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 180.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00125------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:C7              1.62      .171 No_date   28:01   34.35  n/a      .000
                out <=    1.0 01:C7-STR          1.62      .031 No_date   28:34   34.35  n/a      .000
           overflow <=    1.0 03:C7-OVF           .00      .000 No_date    0:00     .00  n/a      .000
      {MxStoUsed=.2774E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00126------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:ST-6             .41      .031 No_date   28:00   25.32 .556      .000
       [XIMP=.46:TIMP=.57]
       [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
       [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=  91.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00127------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:ST-6             .41      .031 No_date   28:00   25.32  n/a      .000
                out <=    1.0 01:ST6STR           .41      .028 No_date   28:03   25.32  n/a      .000
           overflow <=    1.0 03:ST6OVF           .00      .000 No_date    0:00     .00  n/a      .000
      {MxStoUsed=.7725E-03  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00128------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:PT4ST5        431.02     2.323 No_date   29:07   15.73  n/a      .000
                    +     1.0 02:C6-STR          1.87      .036 No_date   28:34   34.35  n/a      .000
                    +     1.0 02:C6-OVF           .00      .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:C7-STR          1.62      .031 No_date   28:34   34.35  n/a      .000
                    +     1.0 02:C7-OVF           .00      .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:ST6STR           .41      .028 No_date   28:03   25.32  n/a      .000
                    +     1.0 02:ST6OVF           .00      .000 No_date    0:00     .00  n/a      .000
                 SUM=     1.0 01:PT5ST6        434.92     2.379 No_date   29:06   15.89  n/a      .000
R0002:C00129------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:PT5ST6        434.92     2.379 No_date   29:06   15.89  n/a      .000
     [RDT= 1.00] out<-    1.0 01:DRAIN4        434.92     2.319 No_date   29:17   15.89  n/a      .000
       [L/S/n=  324./ .100/.043]
       {Vmax=  .532:Dmax= 1.041}
R0002:C00130------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:D4              1.73      .030 No_date   28:36   18.93 .416      .000
       [CN= 88.0: N= 3.00: Tp=  .60]
       [IaREC= 4.00: SMIN= 14.94: SMAX= 99.61: SK= .010]
       [InterEventTime=  12.00]
R0002:C00131------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:Area-B         24.04     2.028 No_date   28:04   31.71 .697      .000
       [XIMP=.62:TIMP=.77]
       [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
       [Pervious     area: IAper= 4.67:SLPP=1.40:LGP=  50.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI=1.40:LGI= 693.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00132------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:Area-B         24.04     2.028 No_date   28:04   31.71  n/a      .000
                out <=    1.0 01:SWMF-B         24.04      .169 No_date   29:09   31.71  n/a      .000
           overflow <=    1.0 03:SWMBOVF          .00      .000 No_date    0:00     .00  n/a      .000
      {MxStoUsed=.4926E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00133------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:DRAIN4        434.92     2.319 No_date   29:17   15.89  n/a      .000
                    +     1.0 02:D4              1.73      .030 No_date   28:36   18.93  n/a      .000
                    +     1.0 02:SWMF-B         24.04      .169 No_date   29:09   31.71  n/a      .000
                    +     1.0 02:SWMBOVF          .00      .000 No_date    0:00     .00  n/a      .000
                 SUM=     1.0 01:D4-EX         460.69     2.507 No_date   29:17   16.73  n/a      .000
R0002:C00134------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:D4-EX         460.69     2.507 No_date   29:17   16.73  n/a      .000
     [RDT= 1.00] out<-    1.0 01:DRAIN5        460.69     2.448 No_date   29:30   16.73  n/a      .000
       [L/S/n=  413./ .160/.033]
       {Vmax=  .501:Dmax=  .708}
R0002:C00135------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:D5              1.90      .026 No_date   28:43   17.40 .382      .000
       [CN= 86.0: N= 3.00: Tp=  .69]
       [IaREC= 4.00: SMIN= 17.43: SMAX=116.21: SK= .010]
       [InterEventTime=  12.00]
R0002:C00136------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:O-13SDF         9.74      .182 No_date   28:22   16.95 .372      .000
       [CN= 81.0: N= 3.00: Tp=  .43]
       [IaREC= 4.00: SMIN= 25.21: SMAX=168.09: SK= .010]
       [InterEventTime=  12.00]
R0002:C00137------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:O-13SDF         9.74      .182 No_date   28:22   16.95  n/a      .000
                out <=    1.0 01:SDF             9.74      .021 No_date   32:19   16.95  n/a      .000
           overflow <=    1.0 03:OVFSDF           .00      .000 No_date    0:00     .00  n/a      .000
      {MxStoUsed=.8320E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00138------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:DRAIN5        460.69     2.448 No_date   29:30   16.73  n/a      .000
                    +     1.0 02:D5              1.90      .026 No_date   28:43   17.40  n/a      .000
                    +     1.0 02:SDF             9.74      .021 No_date   32:19   16.95  n/a      .000
                 SUM=     1.0 01:PT6MC         472.33     2.484 No_date   29:30   16.73  n/a      .000
R0002:C00139------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:O-15           10.67      .230 No_date   28:14   15.77 .347      .000
       [CN= 82.0: N= 3.00: Tp=  .30]
       [IaREC= 4.00: SMIN= 23.09: SMAX=153.94: SK= .010]
       [InterEventTime=  12.00]
R0002:C00140------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:PT6MC         472.33     2.484 No_date   29:30   16.73  n/a      .000
                    +     1.0 02:O-15           10.67      .230 No_date   28:14   15.77  n/a      .000
                 SUM=     1.0 01:M-C           483.00     2.528 No_date   29:29   16.71  n/a      .000
R0002:C00141------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:M-C           483.00     2.528 No_date   29:29   16.71  n/a      .000
     [RDT= 1.00] out<-    1.0 01:O-14Ch        483.00     2.419 No_date   29:44   16.71  n/a      .000
       [L/S/n=  845./ .100/.033]
       {Vmax=  .756:Dmax= 1.160}
R0002:C00142------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:O-14            5.00      .181 No_date   28:04   15.77 .347      .000
       [CN= 82.0: N= 3.00: Tp=  .13]
       [IaREC= 4.00: SMIN= 23.09: SMAX=153.94: SK= .010]
       [InterEventTime=  12.00]
R0002:C00143------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:O-14Ch        483.00     2.419 No_date   29:44   16.71  n/a      .000
                    +     1.0 02:O-14            5.00      .181 No_date   28:04   15.77  n/a      .000
                 SUM=     1.0 01:OKEEFE        488.00     2.434 No_date   29:44   16.70  n/a      .000
#*****************************************************************************
#    Okeefe Pond
#    - Rating curve obtained assuming 40m3/ha in 24 hours for quality control
#      and a ratio of the catchment area to the West Clarke pond rating curve
#      from the MSS for the next coordinates
#*****************************************************************************
R0002:C00144------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:S-1-D2         18.67      .148 No_date   29:14   14.83 .326      .000
       [CN= 77.0: N= 3.00: Tp= 1.12]
       [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
       [InterEventTime=  12.00]
R0002:C00145------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:S-1-D3          6.79      .049 No_date   29:26   14.83 .326      .000
       [CN= 77.0: N= 3.00: Tp= 1.28]
       [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
       [InterEventTime=  12.00]
R0002:C00146------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N_OK        53064.36    46.592 No_date   35:24   12.76  n/a      .000
                    +     1.0 02:OKEEFE        488.00     2.434 No_date   29:44   16.70  n/a      .000
                    +     1.0 02:S-1-D2         18.67      .148 No_date   29:14   14.83  n/a      .000
                    +     1.0 02:S-1-D3          6.79      .049 No_date   29:26   14.83  n/a      .000
                 SUM=     1.0 01:SN_OK       53577.82    47.423 No_date   34:58   12.80  n/a      .000
R0002:C00147------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_OK       53577.82    47.423 No_date   34:58   12.80  n/a      .000
       fname :SN_OK.0002
       remark:Total Flows at Okeefe Drain
#
# Hydrograph from Node Okeefe routed to Node at Foster Drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 6215
#
R0002:C00148------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_OK       53577.82    47.423 No_date   34:58   12.80  n/a      .000
     [RDT= 1.00] out<-    1.0 01:N_FO        53577.82    47.379 No_date   34:58   12.80  n/a      .000
       [L/S/n= 1183./ .076/.035]
       {Vmax=  .918:Dmax= 2.260}
#*****************************************************************************
#    Catchment FOSTER
#    - To Foster ditch (north of the Jock)
#    - Partially developed (medium density); remaining agricultural
#    - 2020-12-01 JFSA Foster area is 332 as per Foster SWMF Environmental Study Report, CH2MHILL, Aug 2013.
#    - 2020-12-01 decrease Foster drainage area from (373 HA) to (307.98 HA) after increasing Okeefe drainage area to (5
#    - 2021-02-12  update Foster area to 325.44 ha as measured from QGIS
#*****************************************************************************
R0002:C00149------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:FOSTER        325.44    13.697 No_date   28:15   28.56 .628      .000
       [XIMP=.55:TIMP=.55]
       [LOSS= 2 :CN= 74.0]
       [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1473.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 36.67: SMAX=244.49: SK= .010]
#*****************************************************************************
#    Foster Pond
#    - Rating curve obtained assuming 40m3/ha in 24 hours for quality control
#      and a ratio of the catchment area to the West Clarke pond rating curve
#      from the MSS for the next coordinates
#*****************************************************************************
R0002:C00150------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:FOSTER        325.44    13.697 No_date   28:15   28.56  n/a      .000
                out <=    1.0 01:P_FOS         325.44     3.894 No_date   29:12   28.56  n/a      .000
           overflow <=    1.0 03:FO-OVF           .00      .000 No_date    0:00     .00  n/a      .000
      {MxStoUsed=.3766E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00151------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:P_FOS         325.44     3.894 No_date   29:12   28.56  n/a      .000
                    +     1.0 02:FO-OVF           .00      .000 No_date    0:00     .00  n/a      .000
                 SUM=     1.0 01:FOSTER-OUT    325.44     3.894 No_date   29:12   28.56  n/a      .000
#*****************************************************************************
R0002:C00152------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:W_CLAR_BRA     73.29     4.584 No_date   28:07   31.34 .689      .000
       [XIMP=.60:TIMP=.65]
       [LOSS= 2 :CN= 77.0]
       [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 699.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 31.15: SMAX=207.66: SK= .010]
R0002:C00153------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:W_CLAR_BRA     73.29     4.584 No_date   28:07   31.34  n/a      .000
                out <=    1.0 01:MS_P10         73.29     1.033 No_date   28:50   31.34  n/a      .000
           overflow <=    1.0 03:P10-OVF          .00      .000 No_date    0:00     .00  n/a      .000
      {MxStoUsed=.7493E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00154------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:S-1-FO-D2       4.94      .040 No_date   29:12   14.83 .326      .000
       [CN= 77.0: N= 3.00: Tp= 1.10]
```

```
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0002:C00155------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:FOSTER-OUT   325.44    3.894 No_date   29:12   28.56  n/a      .000
                     +     1.0 02:S-1-FO-D2      4.94     .040 No_date   29:12   14.83  n/a      .000
                  SUM=     1.0 01:980          330.38    3.933 No_date   29:12   28.36  n/a      .000
R0002:C00156------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD               1.0 01:980          330.38    3.933 No_date   29:12   28.36  n/a      .000
      fname :980.0002
      remark:Total Flows at Station 980 on Foster Drain
#
# Hydrograph from Node Foster SWM (Station 980)to Node at station 520
# Channel X-Section obtained from RVCA Hydraulic Model - Station 980
#
R0002:C00157------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->     1.0 02:980          330.38    3.933 No_date   29:12   28.36  n/a      .000
     [RDT= 1.00] out<-     1.0 01:980-out      330.38    3.804 No_date   29:25   28.36  n/a      .000
      [L/S/n=  460./ .043/.035]
      {Vmax=  .545:Dmax= 1.094}
R0002:C00158------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD      1.0 01:S-1-FO-D1      5.11     .041 No_date   29:12   14.83 .326      .000
      [CN= 77.0: N= 3.00: Tp= 1.10]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0002:C00159------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:980-out      330.38    3.804 No_date   29:25   28.36  n/a      .000
                     +     1.0 02:S-1-FO-D1      5.11     .041 No_date   29:12   14.83  n/a      .000
                  SUM=     1.0 01:520          335.49    3.844 No_date   29:25   28.15  n/a      .000
R0002:C00160------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD               1.0 01:520          335.49    3.844 No_date   29:25   28.15  n/a      .000
      fname :520.0002
      remark:Total Flows at Sation 520 on Foster Drain
# Hydrograph from Node at Station 520 (Foster Drain) to Node at station 6016 (Jock River)
# Channel X-Section obtained from RVCA Hydraulic Model - Station 520
#
R0002:C00161------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->     1.0 02:520          335.49    3.844 No_date   29:25   28.15  n/a      .000
     [RDT= 1.00] out<-     1.0 01:520-out      335.49    3.807 No_date   29:32   28.15  n/a      .000
      [L/S/n=  860./ .587/.035]
      {Vmax= 1.199:Dmax=  .521}
R0002:C00162------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD      1.0 01:S-1-FO-F-D    14.96     .128 No_date   29:05   14.83 .326      .000
      [CN= 77.0: N= 3.00: Tp= 1.01]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0002:C00163------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD    1.0 01:S-1-D8         5.27     .498 No_date   28:00   32.20 .707      .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .75:LGI= 187.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0002:C00164------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD      1.0 01:S-1-A         75.88     .912 No_date   28:37   14.83 .326      .000
      [CN= 77.0: N= 3.00: Tp=  .62]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0002:C00165------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD      1.0 01:W_CLAR_UND    35.65     .286 No_date   29:12   14.83 .326      .000
      [CN= 77.0: N= 3.00: Tp= 1.10]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0002:C00166------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:N_FO       53577.82   47.379 No_date   34:58   12.80  n/a      .000
                     +     1.0 02:520-out      335.49    3.807 No_date   29:32   28.15  n/a      .000
                     +     1.0 02:MS_P10        73.29    1.033 No_date   28:50   31.34  n/a      .000
                     +     1.0 02:P10-OVF         .00     .000 No_date    0:00     .00  n/a      .000
                     +     1.0 02:W_CLAR_UND    35.65     .286 No_date   29:12   14.83  n/a      .000
                     +     1.0 02:S-1-FO-F-D    14.96     .128 No_date   29:05   14.83  n/a      .000
                     +     1.0 02:S-1-D8         5.27     .498 No_date   28:00   32.20  n/a      .000
                     +     1.0 02:S-1-A         75.88     .912 No_date   28:37   14.83  n/a      .000
                  SUM=     1.0 01:SN_FO      54118.36   48.998 No_date   34:32   12.93  n/a      .000
R0002:C00167------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD               1.0 01:SN_FO      54118.36   48.998 No_date   34:32   12.93  n/a      .000
      fname :SN_FO.0002
      remark:Total Flows at Foster Drain
# Hydrograph from Node Foster routed to Node at Cedarview Road
# Channel X-Section obtained from RVCA Hydraulic Model - Station 6016
#
R0002:C00168------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->     1.0 02:SN_FO      54118.36   48.998 No_date   34:32   12.93  n/a      .000
 *   [RDT= 1.00] out<-     1.0 01:N_CE       54118.36   48.989 No_date   34:40   12.93  n/a      .000
      [L/S/n=  159./ .082/.035]
      {Vmax= 1.113:Dmax= 2.623}
#*****************************************************************************
#    Catchment S-1
#    - To Jock River (north and south of Jock)
#    - Primarily agricultural fields; portion of sand quarry
#*****************************************************************************
R0002:C00169------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD      1.0 01:S-1-B         55.36     .825 No_date   28:24   14.83 .326      .000
      [CN= 77.0: N= 3.00: Tp=  .45]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
#    -  JFSA 2021-02-24 change the name from S-1-BCDC to S-1-A and S-1-B. Change their TP values based on the new areas
#    -  JFSA 2021-02-24 "S-1-BCDC-1" and "S-1-BCDC-2" are not existing anymore. "S-1-BCDC-1" is part of "S-1-FO-D2" and
#    -  JFSA 2021-01-19, after adding Greenbank pond, "S-1-BCDC-3" is not existing anymore
R0002:C00170------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD      1.0 01:S-1-D1        21.67     .178 No_date   29:10   14.83 .326      .000
      [CN= 77.0: N= 3.00: Tp= 1.07]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0002:C00171------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD      1.0 01:S-1-D4         3.28     .026 No_date   29:12   14.83 .326      .000
      [CN= 77.0: N= 3.00: Tp= 1.10]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0002:C00172------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD      1.0 01:S-1-D5        12.84     .103 No_date   29:12   14.83 .326      .000
      [CN= 77.0: N= 3.00: Tp= 1.10]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0002:C00173------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD      1.0 01:S-1-D6         1.75     .014 No_date   29:12   14.83 .326      .000
      [CN= 77.0: N= 3.00: Tp= 1.10]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0002:C00174------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD      1.0 01:S-1-D7         2.03     .016 No_date   29:12   14.83 .326      .000
      [CN= 77.0: N= 3.00: Tp= 1.10]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
#    Catchment W_CLAR
#    - To West Clarke Drain (south of the Jock)
#    - Subdivision with 43% imp. as per Barrhaven South MSS
#    - 2020-11-30 update CLARKE Tributary Drainage Area to  = 121 ha based on P598(04)-11
#    - 2020-11-30 split CLARKE Drainage Area to MAJOR and ALL
#*****************************************************************************
R0002:C00175------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD    1.0 01:W_CLAR_MJ      1.77     .141 No_date   28:00   27.78 .610      .000
      [XIMP=.46:TIMP=.59]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 109.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
# 5-Year + 12% Capture
R0002:C00176------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->     1.0 02:W_CLAR_MJ      1.77     .141 No_date   28:00   27.78  n/a      .000
                out <=     1.0 01:W_CLAR_MJn     1.77     .141 No_date   28:00   27.78  n/a      .000
           overflow <=     1.0 03:W_CLAR_MJj      .00     .000 No_date    0:00     .00  n/a      .000
     {MxStoUsed=.6675E-04  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00177------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD    1.0 01:W_CLAR_ALL   119.40    7.746 No_date   28:06   31.34 .689      .000
      [XIMP=.60:TIMP=.65]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 892.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0002:C00178------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:W_CLAR_ALL   119.40    7.746 No_date   28:06   31.34  n/a      .000
                     +     1.0 02:W_CLAR_MJj      .00     .000 No_date    0:00     .00  n/a      .000
                  SUM=     1.0 01:W_CLAR       119.40    7.746 No_date   28:06   31.34  n/a      .000
R0002:C00179------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD               1.0 01:W_CLAR       119.40    7.746 No_date   28:06   31.34  n/a      .000
      fname :W_CLAR.0002
      remark:Total Flows to West Clarke
#*****************************************************************************
#    West Clarke Pond 2
#    - Rating curve obtained from Barrhaven South MSS modeling
#    - Tributary Drainage Area to MSS Pond 2 = 241 ha
#*****************************************************************************
R0002:C00180------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->     1.0 02:W_CLAR       119.40    7.746 No_date   28:06   31.34  n/a      .000
                out <=     1.0 01:MS_P2        119.40     .816 No_date   29:25   31.34  n/a      .000
           overflow <=     1.0 03:P2-OVF          .00     .000 No_date    0:00     .00  n/a      .000
     {MxStoUsed=.2096E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
#*****************************************************************************
R0002:C00181------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:N_CE       54118.36   48.989 No_date   34:40   12.93  n/a      .000
                     +     1.0 02:S-1-D4         3.28     .026 No_date   29:12   14.83  n/a      .000
                     +     1.0 02:S-1-D5        12.84     .103 No_date   29:12   14.83  n/a      .000
                     +     1.0 02:MS_P2        119.40     .816 No_date   29:25   31.34  n/a      .000
                     +     1.0 02:P2-OVF          .00     .000 No_date    0:00     .00  n/a      .000
                  SUM=     1.0 01:SN_CE      54253.88   49.508 No_date   34:35   12.97  n/a      .000
R0002:C00182------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD               1.0 01:SN_CE      54253.88   49.508 No_date   34:35   12.97  n/a      .000
      fname :SN_CE.0002
      remark:Total Flows before Station 5737 on Jock River
# Channel X-Section obtained from RVCA Hydraulic Model - Station 5737
# JFSA 2021-02-25 add station 5737 before station 5002. Station 5737 was extracted from the HEC-RAS model T:\PROJ\1474-1
# JFSA 2021-03-02  change the slope to 0.1% instead of 0.0175 to stabilize the model
R0002:C00183------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->     1.0 02:SN_CE      54253.88   49.508 No_date   34:35   12.97  n/a      .000
 *   [RDT= 1.00] out<-     1.0 01:5737       54253.88   48.656 No_date   37:03   12.97  n/a      .000
      [L/S/n=  270./ .018/.035]
      {Vmax=  .610:Dmax= 3.450}
R0002:C00184------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:5737       54253.88   48.656 No_date   37:03   12.97  n/a      .000
                     +     1.0 02:S-1-D1        21.67     .178 No_date   29:10   14.83  n/a      .000
                     +     1.0 02:S-1-D6         1.75     .014 No_date   29:12   14.83  n/a      .000
                     +     1.0 02:S-1-D7         2.03     .016 No_date   29:12   14.83  n/a      .000
                  SUM=     1.0 01:5002       54279.33   48.689 No_date   37:02   12.97  n/a      .000
R0002:C00185------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD               1.0 01:5002       54279.33   48.689 No_date   37:02   12.97  n/a      .000
      fname :5002.0002
      remark:Total Flows before Station 5002 on Jock River
# Hydrograph from Node Cedarview Road routed to Node at West Clarke Drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 5002
# JFSA 2021-02-19 Change the slope from 0.01 % (as per Stantec Report 2007) to 0.0255 % so the model will be more stable
# JFSA 2021-02-19 Change to three ROUTE CHANNEL with length 275 m each instead of one with 825 m length so the model wil
# JFSA 2021-02-26 change the length of 5002 route channel from 825 m to 736 m. That is because of adding station 5737 be
R0002:C00186------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->     1.0 02:5002       54279.33   48.689 No_date   37:02   12.97  n/a      .000
     [RDT= 1.00] out<-     1.0 01:N_WCa      54279.33   48.725 No_date   36:35   12.97  n/a      .000
      [L/S/n=  245./ .095/.035]
      {Vmax=  .961:Dmax= 2.011}
R0002:C00187------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->     1.0 02:N_WCa      54279.33   48.725 No_date   36:35   12.97  n/a      .000
     [RDT= 1.00] out<-     1.0 01:N_WCb      54279.33   48.698 No_date   36:50   12.97  n/a      .000
      [L/S/n=  245./ .095/.035]
      {Vmax=  .961:Dmax= 2.011}
R0002:C00188------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->     1.0 02:N_WCb      54279.33   48.698 No_date   36:50   12.97  n/a      .000
     [RDT= 1.00] out<-     1.0 01:N_WC       54279.33   48.745 No_date   36:36   12.97  n/a      .000
      [L/S/n=  245./ .095/.035]
      {Vmax=  .961:Dmax= 2.011}
#*****************************************************************************
# Hydrograph from Node West Clarke routed to Node at Kennedy - Burnett Drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 4534
#
R0002:C00189------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->     1.0 02:N_WC       54279.33   48.745 No_date   36:36   12.97  n/a      .000
     [RDT= 1.00] out<-     1.0 01:N_KB       54279.33   48.700 No_date   36:46   12.97  n/a      .000
      [L/S/n= 1020./ .050/.035]
      {Vmax=  .848:Dmax= 2.425}
#*****************************************************************************
#    Catchment KEN_BU
#    - To Kennedy-Burnett SWM Facility
#    - Outlets to Fraser-Clarke drain (north of the Jock)
#    - Medium density residential subdivision
#*****************************************************************************
#*****************************************************************************
#   Existing Kennedy-Burnett SWM Facility
#    - Rating curve obtained from URTKBP
#    - Tributary Drainage Area to Pond = 160 ha
#*****************************************************************************
R0002:C00190------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD    1.0 01:KB-01A        40.82    1.627 No_date   28:18   14.35 .315      .000
      [XIMP=.10:TIMP=.40]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI= .50:LGI= 522.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00191------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD        1.0 01:KB-01A        40.82    1.627 No_date   28:18   14.35  n/a      .000
     Major System   /      1.0 02:KB-01A-MJ       .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \      1.0 03:KB-01A-MN     40.82    1.627 No_date   28:18   14.35  n/a      .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00192------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:KB-01A-MJ       .00     .000 No_date    0:00     .00  n/a      .000
                     +     1.0 02:KB-01A-MN     40.82    1.627 No_date   28:18   14.35  n/a      .000
                  SUM=     1.0 01:KB-01A-S      40.82    1.627 No_date   28:18   14.35  n/a      .000
R0002:C00193------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD    1.0 01:KB-01B        31.10    1.062 No_date   28:08   16.28 .358      .000
      [XIMP=.19:TIMP=.38]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .42:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI= .42:LGI= 455.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00194------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD        1.0 01:KB-01B        31.10    1.062 No_date   28:08   16.28  n/a      .000
     Major System   /      1.0 02:KB-01B-MJ       .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \      1.0 03:KB-01B-MN     31.10    1.062 No_date   28:08   16.28  n/a      .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00195------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:KB-01B-MJ       .00     .000 No_date    0:00     .00  n/a      .000
                     +     1.0 02:KB-01B-MN     31.10    1.062 No_date   28:08   16.28  n/a      .000
                  SUM=     1.0 01:KB-01B-S      31.10    1.062 No_date   28:08   16.28  n/a      .000
R0002:C00196------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD    1.0 01:KB-01C        13.78     .776 No_date   28:06   17.09 .375      .000
      [XIMP=.20:TIMP=.41]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI= .50:LGI= 303.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00197------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD        1.0 01:KB-01C        13.78     .776 No_date   28:06   17.09  n/a      .000
     Major System   /      1.0 02:KB-01C-MJ       .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \      1.0 03:KB-01C-MN     13.78     .776 No_date   28:06   17.09  n/a      .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00198------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:KB-01C-MJ       .00     .000 No_date    0:00     .00  n/a      .000
                     +     1.0 02:KB-01C-MN     13.78     .776 No_date   28:06   17.09  n/a      .000
                  SUM=     1.0 01:KB-01C-S      13.78     .776 No_date   28:06   17.09  n/a      .000
R0002:C00199------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD    1.0 01:KB-03         84.78    3.788 No_date   28:12   16.73 .368      .000
      [XIMP=.20:TIMP=.39]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI= .63:LGI= 752.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00200------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD        1.0 01:KB-03         84.78    3.788 No_date   28:12   16.73  n/a      .000
     Major System   /      1.0 02:KB-03-MJ        .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \      1.0 03:KB-03-MN      84.78    3.788 No_date   28:12   16.73  n/a      .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00201------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:KB-03-MJ        .00     .000 No_date    0:00     .00  n/a      .000
                     +     1.0 02:KB-03-MN      84.78    3.788 No_date   28:12   16.73  n/a      .000
                  SUM=     1.0 01:KB-03-S       84.78    3.788 No_date   28:12   16.73  n/a      .000
R0002:C00202------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD    1.0 01:KB-04          6.95     .792 No_date   28:01   38.80 .853      .000
      [XIMP=.85:TIMP=.85]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .94:SLPI= .50:LGI= 215.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00203------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD        1.0 01:KB-04          6.95     .792 No_date   28:01   38.80  n/a      .000
     Major System   /      1.0 02:KB-04-MJ        .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \      1.0 03:KB-04-MN       6.95     .503 No_date   27:53   39.02  n/a      .000
      {MjSysSto=.1541E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00204------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:KB-04-MJ        .00     .000 No_date    0:00     .00  n/a      .000
                     +     1.0 02:KB-04-MN       6.95     .503 No_date   27:53   39.02  n/a      .000
                  SUM=     1.0 01:KB-04-S        6.95     .503 No_date   27:53   39.02  n/a      .000
R0002:C00205------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD    1.0 01:KB-05          5.19     .653 No_date   28:01   41.29 .907      .000
      [XIMP=.93:TIMP=.93]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 186.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00206------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD    1.0 01:KB-06         12.93    1.683 No_date   28:00   39.68 .872      .000
      [XIMP=.87:TIMP=.87]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .94:SLPI=4.75:LGI= 294.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00207------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD        1.0 01:KB-06         12.93    1.683 No_date   28:00   39.68  n/a      .000
     Major System   /      1.0 02:KB-06-MJ        .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \      1.0 03:KB-06-MN      12.93    1.683 No_date   28:00   39.68  n/a      .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00208------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:KB-06-MJ        .00     .000 No_date    0:00     .00  n/a      .000
                     +     1.0 02:KB-06-MN      12.93    1.683 No_date   28:00   39.68  n/a      .000
                  SUM=     1.0 01:KB-06-S       12.93    1.683 No_date   28:00   39.68  n/a      .000
R0002:C00209------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD    1.0 01:KB-11          4.03     .425 No_date   28:00   32.17 .707      .000
      [XIMP=.68:TIMP=.68]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI=2.00:LGI= 164.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00210------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD        1.0 01:KB-11          4.03     .425 No_date   28:00   32.17  n/a      .000
     Major System   /      1.0 02:KB-11-MJ        .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \      1.0 03:KB-11-MN       4.03     .425 No_date   28:00   32.17  n/a      .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00211------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:KB-11-MJ        .00     .000 No_date    0:00     .00  n/a      .000
                     +     1.0 02:KB-11-MN       4.03     .425 No_date   28:00   32.17  n/a      .000
                  SUM=     1.0 01:KB-11-S        4.03     .425 No_date   28:00   32.17  n/a      .000
R0002:C00212------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD    1.0 01:S1             4.99     .689 No_date   28:00   41.29 .907      .000
      [XIMP=.93:TIMP=.93]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=2.00:LGI= 182.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00213------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD    1.0 01:KB-15          2.15     .241 No_date   28:00   37.11 .815      .000
      [XIMP=.79:TIMP=.79]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .16:SLPI= .30:LGI= 120.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00214------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:KB-01A-S      40.82    1.627 No_date   28:18   14.35  n/a      .000
```

```
                    +     1.0 02:KB-01B-S      31.10    1.062 No_date   28:08   16.28  n/a     .000
                    +     1.0 02:KB-01C-S      13.78     .776 No_date   28:06   17.09  n/a     .000
                    +     1.0 02:KB-03-S       84.78    3.788 No_date   28:12   16.73  n/a     .000
                    +     1.0 02:KB-04-S        6.95     .503 No_date   27:53   39.02  n/a     .000
                    +     1.0 02:KB-05          5.19     .653 No_date   28:01   41.29  n/a     .000
                    +     1.0 02:KB-06-S       12.93    1.683 No_date   28:00   39.68  n/a     .000
                    +     1.0 02:KB-11-S        4.03     .425 No_date   28:00   32.17  n/a     .000
                    +     1.0 02:KB-15          2.15     .241 No_date   28:00   37.11  n/a     .000
                    +     1.0 02:S1             4.99     .689 No_date   28:00   41.29  n/a     .000
                 SUM=     1.0 01:KB-P1        206.72    9.491 No_date   28:02   20.13  n/a     .000
R0002:C00215------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:KB-P1        206.72    9.491 No_date   28:02   20.13  n/a     .000
                out <=    1.0 01:KB-P1R       206.72    8.405 No_date   28:13   20.13  n/a     .000
           overflow <=    1.0 03:KB-P1ovf        .00     .000 No_date    0:00     .00  n/a     .000
      {MxStoUsed=.3779E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00216------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-P1R       206.72    8.405 No_date   28:13   20.13  n/a     .000
                    +     1.0 02:KB-P1ovf        .00     .000 No_date    0:00     .00  n/a     .000
                 SUM=     1.0 01:KB-Pond1     206.72    8.405 No_date   28:13   20.13  n/a     .000
R0002:C00217------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:KB-Pond1     206.72    8.405 No_date   28:13   20.13  n/a     .000
      fname :KB-Pond1.0002
      remark:Total Flows at KB first pond
R0002:C00218------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-07         10.86    1.337 No_date   28:00   39.32 .864     .000
      [XIMP=.86:TIMP=.86]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI=2.00:LGI= 269.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00219------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-07         10.86    1.337 No_date   28:00   39.32  n/a     .000
     Major System   /     1.0 02:KB-07-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-07-MN      10.86    1.337 No_date   28:00   39.32  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00220------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-07-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:KB-07-MN      10.86    1.337 No_date   28:00   39.32  n/a     .000
                 SUM=     1.0 01:KB-07-S       10.86    1.337 No_date   28:00   39.32  n/a     .000
R0002:C00221------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-08          6.61     .651 No_date   28:00   30.82 .677     .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI=2.00:LGI= 210.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00222------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-08          6.61     .651 No_date   28:00   30.82  n/a     .000
     Major System   /     1.0 02:KB-08-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-08-MN       6.61     .651 No_date   28:00   30.82  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00223------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-08-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:KB-08-MN       6.61     .651 No_date   28:00   30.82  n/a     .000
                 SUM=     1.0 01:KB-08-S        6.61     .651 No_date   28:00   30.82  n/a     .000
R0002:C00224------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-09          2.60     .344 No_date   28:00   38.64 .849     .000
      [XIMP=.86:TIMP=.86]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=2.00:LGI= 132.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00225------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-10_1        2.37     .314 No_date   28:00   38.64 .849     .000
      [XIMP=.86:TIMP=.86]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=2.00:LGI= 126.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00226------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-10_2        1.14     .153 No_date   28:00   38.64 .849     .000
      [XIMP=.86:TIMP=.86]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=2.00:LGI=  87.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00227------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-12          4.86     .581 No_date   28:00   36.37 .799     .000
      [XIMP=.79:TIMP=.79]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.10:SLPI=2.00:LGI= 180.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00228------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-12          4.86     .581 No_date   28:00   36.37  n/a     .000
     Major System   /     1.0 02:KB-12-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-12-MN       4.86     .581 No_date   28:00   36.37  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00229------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-12-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:KB-12-MN       4.86     .581 No_date   28:00   36.37  n/a     .000
                 SUM=     1.0 01:KB-12-S        4.86     .581 No_date   28:00   36.37  n/a     .000
R0002:C00230------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-13         10.19     .970 No_date   28:00   30.82 .677     .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI=2.00:LGI= 261.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00231------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-13         10.19     .970 No_date   28:00   30.82  n/a     .000
     Major System   /     1.0 02:KB-13-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-13-MN      10.19     .970 No_date   28:00   30.82  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00232------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-13-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:KB-13-MN      10.19     .970 No_date   28:00   30.82  n/a     .000
                 SUM=     1.0 01:KB-13-S       10.19     .970 No_date   28:00   30.82  n/a     .000
R0002:C00233------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-14          5.47     .543 No_date   28:00   30.82 .677     .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI=2.00:LGI= 191.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00234------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-14          5.47     .543 No_date   28:00   30.82  n/a     .000
     Major System   /     1.0 02:KB-14-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-14-MN       5.47     .543 No_date   28:00   30.82  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00235------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-14-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:KB-14-MN       5.47     .543 No_date   28:00   30.82  n/a     .000
                 SUM=     1.0 01:KB-14-S        5.47     .543 No_date   28:00   30.82  n/a     .000
R0002:C00236------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-16_2        3.42     .337 No_date   28:01   33.97 .746     .000
      [XIMP=.71:TIMP=.71]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .16:SLPI= .30:LGI= 151.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00237------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-Pond1     206.72    8.405 No_date   28:13   20.13  n/a     .000
                    +     1.0 02:KB-07-S       10.86    1.337 No_date   28:00   39.32  n/a     .000
                    +     1.0 02:KB-08-S        6.61     .651 No_date   28:00   30.82  n/a     .000
                    +     1.0 02:KB-09          2.60     .344 No_date   28:00   38.64  n/a     .000
                    +     1.0 02:KB-10_1        2.37     .314 No_date   28:00   38.64  n/a     .000
                    +     1.0 02:KB-10_2        1.14     .153 No_date   28:00   38.64  n/a     .000
                    +     1.0 02:KB-12-S        4.86     .581 No_date   28:00   36.37  n/a     .000
                    +     1.0 02:KB-13-S       10.19     .970 No_date   28:00   30.82  n/a     .000
                    +     1.0 02:KB-14-S        5.47     .543 No_date   28:00   30.82  n/a     .000
                    +     1.0 02:KB-16_2        3.42     .337 No_date   28:01   33.97  n/a     .000
                 SUM=     1.0 01:KB-P2        254.24   11.772 No_date   28:02   22.82  n/a     .000
R0002:C00238------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:KB-P2        254.24   11.772 No_date   28:02   22.82  n/a     .000
                out <=    1.0 01:KB-P2R       254.24    9.930 No_date   28:12   22.82  n/a     .000
           overflow <=    1.0 03:KB-P2ovf        .00     .000 No_date    0:00     .00  n/a     .000
      {MxStoUsed=.4507E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00239------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-P2R       254.24    9.930 No_date   28:12   22.82  n/a     .000
                    +     1.0 02:KB-P2ovf        .00     .000 No_date    0:00     .00  n/a     .000
                 SUM=     1.0 01:KB-Pond2     254.24    9.930 No_date   28:12   22.82  n/a     .000
R0002:C00240------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:KB-Pond2     254.24    9.930 No_date   28:12   22.82  n/a     .000
      fname :KB-Pond2.0002
      remark:Total Flows at KB second pond
R0002:C00241------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-16_1        2.80     .293 No_date   28:01   35.54 .781     .000
      [XIMP=.75:TIMP=.75]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .16:SLPI= .30:LGI= 137.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00242------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-Pond2     254.24    9.930 No_date   28:12   22.82  n/a     .000
                    +     1.0 02:KB-16_1        2.80     .293 No_date   28:01   35.54  n/a     .000
                 SUM=     1.0 01:KB-P3        257.04   10.049 No_date   28:11   22.96  n/a     .000
R0002:C00243------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:KB-P3        257.04   10.049 No_date   28:11   22.96  n/a     .000
                out <=    1.0 01:KB-P3R        18.54     .051 No_date   18:09   22.96  n/a     .000
           overflow <=    1.0 03:KB-P3ovf     238.50    9.997 No_date   28:11   22.96  n/a     .000
      {MxStoUsed=.2001E-02  m3, TotOvfVol=.5477E+01  m3, N-Ovf=    1, TotDurOvf=   22.hrs}
R0002:C00244------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-P3R        18.54     .051 No_date   18:09   22.96  n/a     .000
                    +     1.0 02:KB-P3ovf     238.50    9.997 No_date   28:11   22.96  n/a     .000
                 SUM=     1.0 01:KB-Pond3     257.04   10.048 No_date   28:11   22.96  n/a     .000
R0002:C00245------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:KB-Pond3     257.04   10.048 No_date   28:11   22.96  n/a     .000
      fname :KB-Pond3.0002
      remark:Total Flows at KB third pond
#******************************************************************************
#    EXISTING / PROPOSED Subcatchments (Kennedy-Burnett SWM Facility (118080), SWM Modeling Approach, NOVATECH Report Ju
#    - TO FRASER-CLARKE DRAIN
#******************************************************************************
R0002:C00246------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:FC-01          8.03     .575 No_date   28:01   23.89 .525     .000
      [XIMP=.47:TIMP=.47]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 231.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00247------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:FC-01          8.03     .575 No_date   28:01   23.89  n/a     .000
     Major System   /     1.0 02:FC-01-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:FC-01-MN       8.03     .575 No_date   28:01   23.89  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00248------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:FC-01-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:FC-01-MN       8.03     .575 No_date   28:01   23.89  n/a     .000
                 SUM=     1.0 01:FC-01-S        8.03     .575 No_date   28:01   23.89  n/a     .000
R0002:C00249------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:FC-02         16.05    1.936 No_date   28:01   41.29 .907     .000
      [XIMP=.93:TIMP=.93]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 327.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00250------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:FC-02         16.05    1.936 No_date   28:01   41.29  n/a     .000
     Major System   /     1.0 02:FC-02-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:FC-02-MN      16.05    1.159 No_date   27:52   41.31  n/a     .000
      {MjSysSto=.4641E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00251------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:FC-02-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:FC-02-MN      16.05    1.159 No_date   27:52   41.31  n/a     .000
                 SUM=     1.0 01:FC-02-S       16.05    1.159 No_date   27:52   41.31  n/a     .000
R0002:C00252------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:FC-03          7.37     .687 No_date   28:01   30.32 .666     .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 222.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00253------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:FC-03          7.37     .687 No_date   28:01   30.32  n/a     .000
     Major System   /     1.0 02:FC-03-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:FC-03-MN       7.37     .358 No_date   27:49   30.49  n/a     .000
      {MjSysSto=.2043E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00254------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:FC-03-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:FC-03-MN       7.37     .358 No_date   27:49   30.49  n/a     .000
                 SUM=     1.0 01:FC-03-S        7.37     .358 No_date   27:49   30.49  n/a     .000
R0002:C00255------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:FC-04         12.87    1.148 No_date   28:01   30.32 .666     .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 293.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00256------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:FC-04         12.87    1.148 No_date   28:01   30.32  n/a     .000
     Major System   /     1.0 02:FC-04-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:FC-04-MN      12.87     .741 No_date   27:53   30.44  n/a     .000
      {MjSysSto=.2134E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00257------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:FC-04-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:FC-04-MN      12.87     .741 No_date   27:53   30.44  n/a     .000
                 SUM=     1.0 01:FC-04-S       12.87     .741 No_date   27:53   30.44  n/a     .000
#******************************************************************************
#    PROPOSED Subcatchments (Kennedy-Burnett SWM Facility (118080), SWM Modeling Approach, NOVATECH Report June, 2020)
#    - TO JOCK RIVER
#******************************************************************************
R0002:C00258------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:JR-01          8.24     .764 No_date   28:01   30.32 .666     .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 234.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00259------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:JR-01          8.24     .764 No_date   28:01   30.32  n/a     .000
     Major System   /     1.0 02:JR-01-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:JR-01-MN       8.24     .563 No_date   28:13   30.43  n/a     .000
      {MjSysSto=.8257E+02, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00260------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:JR-01-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:JR-01-MN       8.24     .563 No_date   27:55   30.43  n/a     .000
                 SUM=     1.0 01:JR-01-S        8.24     .563 No_date   27:55   30.43  n/a     .000
R0002:C00261------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:JR-02          1.59     .162 No_date   28:00   30.32 .666     .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 103.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00262------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:JR-02          1.59     .162 No_date   28:00   30.32  n/a     .000
     Major System   /     1.0 02:JR-02-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:JR-02-MN       1.59     .153 No_date   27:58   30.45  n/a     .000
      {MjSysSto=.1236E+01, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00263------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:JR-02-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:JR-02-MN       1.59     .153 No_date   27:58   30.45  n/a     .000
                 SUM=     1.0 01:JR-02-S        1.59     .153 No_date   27:58   30.45  n/a     .000
#******************************************************************************
#    Catchment FRASER
#    - To Fraser-Clarke drain (north of the Jock)
#    - Developed land with assumed 43% imp.
#    - 2020-12-17 Change Fraser area to be 35.1 as measured from QGIS
#    - 2020-12-17 All Fraser is undeveloped (Nashyd)
#******************************************************************************
R0002:C00264------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:FRASER-DRN    13.65     .212 No_date   28:22   14.83 .326     .000
      [CN= 77.0: N= 3.00: Tp=  .43]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0002:C00265------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:FRASER-D      21.61     .245 No_date   28:41   14.83 .326     .000
      [CN= 77.0: N= 3.00: Tp=  .67]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0002:C00266------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-Pond3     257.04   10.048 No_date   28:11   22.96  n/a     .000
                    +     1.0 02:S-1-B         55.36     .825 No_date   28:24   14.83  n/a     .000
                    +     1.0 02:FRASER-DRN    13.65     .212 No_date   28:22   14.83  n/a     .000
                    +     1.0 02:FRASER-D      21.61     .245 No_date   28:41   14.83  n/a     .000
                    +     1.0 02:N_KB       54279.33   48.700 No_date   36:46   12.97  n/a     .000
                    +     1.0 02:FC-01-S        8.03     .575 No_date   28:01   23.89  n/a     .000
                    +     1.0 02:FC-02-S       16.05    1.159 No_date   27:52   41.31  n/a     .000
                    +     1.0 02:FC-03-S        7.37     .358 No_date   27:49   30.49  n/a     .000
                 SUM=     1.0 01:4241       54658.44   49.005 No_date   36:45   13.03  n/a     .000
R0002:C00267------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:4241       54658.44   49.005 No_date   36:45   13.03  n/a     .000
      fname :4241.0002
      remark:Total Flows at Ken-Burnett Outlet
# Hydrograph from Node Ken-Burnett to station 3633
# Channel X-Section obtained from RVCA Hydraulic Model - Station 4241
#
R0002:C00268------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:4241       54658.44   49.005 No_date   36:45   13.03  n/a     .000
     [RDT= 1.00] out<-    1.0 01:4241-out   54658.44   48.957 No_date   37:04   13.03  n/a     .000
      [L/S/n=  294./ .109/.035]
      {Vmax=  .962:Dmax= 1.546}
R0002:C00269------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:4241-out   54658.44   48.957 No_date   37:04   13.03  n/a     .000
                    +     1.0 02:FC-04-S       12.87     .741 No_date   27:53   30.44  n/a     .000
                    +     1.0 02:JR-01-S        8.24     .563 No_date   27:55   30.43  n/a     .000
                    +     1.0 02:JR-02-S        1.59     .153 No_date   27:58   30.45  n/a     .000
                 SUM=     1.0 01:SN_KB      54681.13   48.979 No_date   37:04   13.04  n/a     .000
R0002:C00270------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_KB      54681.13   48.979 No_date   37:04   13.04  n/a     .000
      fname :SN_KB.0002
      remark:HYD_COMMENT=["Total Flows before Station 3633]
# Hydrograph from Station 3633 to Node Todd
# Channel X-Section obtained from RVCA Hydraulic Model - Station 3633
# JFSA 2021-02-26 change the channel length (at station 3633) from 650m to 608m and change the slope from 0.0498% to 0.2
#
R0002:C00271------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_KB      54681.13   48.979 No_date   37:04   13.04  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N_TO       54681.13   48.971 No_date   37:11   13.04  n/a     .000
      [L/S/n=  608./ .247/.035]
      {Vmax= 1.300:Dmax= 1.137}
#******************************************************************************
#    Catchment Greenbank
#    - To Greenbank Drain (south of the Jock)
#    - JFSA 2021-01-18 add Greenbank pond as per JFSA, P598(06)-15, June 2016
#    - JFSA 2021-01-19 update area from 37.479 ha to 36.6 ha based on GIS measurements
#******************************************************************************
R0002:C00272------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:Greenbank     36.60    2.954 No_date   28:02   32.54 .715     .000
      [XIMP=.64:TIMP=.68]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 494.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0002:C00273------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:Greenbank     36.60    2.954 No_date   28:02   32.54  n/a     .000
                out <=    1.0 01:GreenB_MN     36.60     .569 No_date   28:38   32.54  n/a     .000
           overflow <=    1.0 03:GreenB_MJ       .00     .000 No_date    0:00     .00  n/a     .000
      {MxStoUsed=.6052E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00274------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N_TO       54681.13   48.971 No_date   37:11   13.04  n/a     .000
                    +     1.0 02:GreenB_MJ       .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:GreenB_MN     36.60     .569 No_date   28:38   32.54  n/a     .000
                 SUM=     1.0 01:GreenB     54717.73   49.055 No_date   37:10   13.05  n/a     .000
R0002:C00275------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:GreenB     54717.73   49.055 No_date   37:10   13.05  n/a     .000
      fname :GreenB.0002
      remark:Total Flows at Greenbank Drain
#******************************************************************************
#    Catchment TODD
#    - To Todd Drain (south of the Jock)
#    - Subdivision with 43% imp. as per Barrhaven South MSS
```

```
#    - 2020-11-30 increase imp. based on P598(04)-11
#    - 2020-11-30 update TODD Tributary Drainage Area to  = 146.015 ha based on P598(04)-11
#    - 2020-11-30 split TODD Drainage Area to MAJOR, MINOR, POND and ALL
#*****************************************************************************
#    - JFSA 2021-01-19 add "TODD_MN1" as part of Clarke("W_CLAR_MJ") and remove it from Todd
R0002:C00276------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:TODD_MN2       2.10     .179 No_date   28:00   28.91 .635     .000
      [XIMP=.53:TIMP=.57]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 118.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0002:C00277------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:TODD_MN3        .12     .011 No_date   28:00   28.91 .635     .000
      [XIMP=.53:TIMP=.57]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI=  28.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0002:C00278------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:TODD_MJ       30.23    2.154 No_date   28:03   29.64 .651     .000
      [XIMP=.52:TIMP=.64]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 449.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0002:C00279------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:TODD_ALL     112.91    6.553 No_date   28:06   28.70 .631     .000
      [XIMP=.52:TIMP=.57]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 868.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0002:C00280------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:TODD_P         3.06     .295 No_date   28:00   31.76 .698     .000
      [XIMP=.63:TIMP=.63]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 143.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
# 5-Year + 12% Capture
R0002:C00281------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:TODD_MJ       30.23    2.154 No_date   28:03   29.64  n/a     .000
 *              out <=    1.0 01:TODD_MJn      30.23    2.154 No_date   28:03   29.64  n/a     .000
           overflow <=    1.0 03:TODD_MJj        .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.6551E-04  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
# 5-Year + 12% Capture
R0002:C00282------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:TODD_MN2       2.10     .179 No_date   28:00   28.91  n/a     .000
                out <=    1.0 01:TODD_MN2n      2.10     .179 No_date   28:00   28.91  n/a     .000
           overflow <=    1.0 03:TODD_MN2j       .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.6761E-04  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00283------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:TODD_MN3        .12     .011 No_date   28:00   28.91  n/a     .000
                out <=    1.0 01:TODD_MN3n       .12     .010 No_date   28:00   28.91  n/a     .000
           overflow <=    1.0 03:TODD_MN3j       .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.6566E-04  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00284------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A2            25.50    1.427 No_date   28:04   25.60 .563     .000
      [XIMP=.42:TIMP=.52]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 566.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0002:C00285------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A2            25.50    1.427 No_date   28:04   25.60  n/a     .000
     Major System   /     1.0 02:A2-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A2-MN         25.50    1.427 No_date   28:04   25.60  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00286------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:TODD_MN2n      2.10     .179 No_date   28:00   28.91  n/a     .000
                   +      1.0 02:TODD_MN3n       .12     .010 No_date   28:00   28.91  n/a     .000
                   +      1.0 02:TODD_MJj        .00     .000 No_date    0:00     .00  n/a     .000
                   +      1.0 02:TODD_P         3.06     .295 No_date   28:00   31.77  n/a     .000
                   +      1.0 02:TODD_ALL     112.91    6.553 No_date   28:06   28.70  n/a     .000
                   +      1.0 02:W_CLAR_MJn     1.77     .141 No_date   28:00   27.78  n/a     .000
                SUM=      1.0 01:TODD         119.95    6.882 No_date   28:05   28.77  n/a     .000
R0002:C00287------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:TODD         119.95    6.882 No_date   28:05   28.77  n/a     .000
      fname :TODD.0002
      remark:Total Flows at Todd Drain
#*****************************************************************************
#    Todd Pond 3
#    - Rating curve obtained from Barrhaven South MSS modeling
#    - stantec 2007, Tributary Drainage Area to MSS Pond 3 = 193 ha
#*****************************************************************************
R0002:C00288------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:TODD         119.95    6.882 No_date   28:05   28.77  n/a     .000
                out <=    1.0 01:MS_P3        119.95    1.033 No_date   29:08   28.76  n/a     .000
           overflow <=    1.0 03:P3-OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.2183E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00289------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:GreenB     54717.73   49.055 No_date   37:10   13.05  n/a     .000
                   +      1.0 02:MS_P3        119.95    1.033 No_date   29:08   28.76  n/a     .000
                   +      1.0 02:P3-OVF          .00     .000 No_date    0:00     .00  n/a     .000
                   +      1.0 02:TODD_MN2j       .00     .000 No_date    0:00     .00  n/a     .000
                   +      1.0 02:A2-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                SUM=      1.0 01:SN_TO      54837.69   49.202 No_date   37:09   13.08  n/a     .000
R0002:C00290------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_TO      54837.69   49.202 No_date   37:09   13.08  n/a     .000
      fname :SN_TO.0002
      remark:Total Flows at Todd Drain
#
# Hydrograph from Todd Drain routed to Corrigan Drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 2462
# 2021-02-19 Change the slope from 0.033 % (as per Stantec Report 2007) to 0.05 % so the model will be more stable and g
R0002:C00291------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_TO      54837.69   49.202 No_date   37:09   13.08  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:N_TO       54837.69   48.869 No_date   38:25   13.08  n/a     .000
      [L/S/n=  280./ .050/.045]
      {Vmax=  .730:Dmax= 2.134}
R0002:C00292------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:N_TO       54837.69   48.869 No_date   38:25   13.08  n/a     .000
      fname :N_TO.0002
      remark:Total inflows at Station 2462
#*****************************************************************************
#    Catchment CORRIG
#    - To Corrigan Drain (south of the Jock)
#    - Primarily Developed (medium density)
#    - JFSA JAN 2021, add Corrigan subcatchments as per IBI, July 2008
#*****************************************************************************
R0002:C00293------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:corr1         15.87    1.352 No_date   28:02   31.77 .698     .000
      [XIMP=.63:TIMP=.63]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 325.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0002:C00294------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:corr1         15.87    1.352 No_date   28:02   31.77  n/a     .000
     Major System   /     1.0 02:corr1-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:corr1-MN      15.87    1.352 No_date   28:02   31.77  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00295------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:corr2         12.47     .100 No_date   29:12   14.83 .326     .000
      [CN= 77.0: N= 3.00: Tp= 1.10]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0002:C00296------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A1-Corrig     15.75     .982 No_date   28:02   25.60 .563     .000
      [XIMP=.42:TIMP=.52]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 324.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0002:C00297------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A1-Corrig     15.75     .982 No_date   28:02   25.60  n/a     .000
     Major System   /     1.0 02:A1-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A1-MN         15.75     .982 No_date   28:02   25.60  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00298------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:B1             2.77     .033 No_date   28:09    9.64 .212     .000
      [CN= 56.0: N= 3.00: Tp=  .23]
      [IaREC= 4.00: SMIN= 79.69: SMAX=531.24: SK= .010]
      [InterEventTime=  12.00]
R0002:C00299------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A4             1.27     .116 No_date   28:01   32.20 .707     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 253.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0002:C00300------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A4             1.27     .116 No_date   28:01   32.20  n/a     .000
     Major System   /     1.0 02:A4-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A4-MN          1.27     .116 No_date   28:01   32.20  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00301------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:A1-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                   +      1.0 02:A1-MN         15.75     .982 No_date   28:02   25.60  n/a     .000
                   +      1.0 02:corr1-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                   +      1.0 02:corr1-MN      15.87    1.352 No_date   28:02   31.77  n/a     .000
                   +      1.0 02:corr2         12.47     .100 No_date   29:12   14.83  n/a     .000
                   +      1.0 02:B1             2.77     .033 No_date   28:09    9.64  n/a     .000
                   +      1.0 02:A4-MN          1.27     .116 No_date   28:01   32.20  n/a     .000
                SUM=      1.0 01:MH101         48.13    2.497 No_date   28:02   24.10  n/a     .000
R0002:C00302------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH101         48.13    2.497 No_date   28:02   24.10  n/a     .000
      fname :MH101.0002
      remark:Total Flows at MH101
R0002:C00303------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH101         48.13    2.497 No_date   28:02   24.10  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:101-102       48.13    2.412 No_date   28:03   24.10  n/a     .000
      [L/S/n=  368./ .540/.013]
      {Vmax= 2.789:Dmax=  .935}
      [Din= 1.05:Dused= 1.14]
R0002:C00304------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:A2-MN         25.50    1.427 No_date   28:04   25.60  n/a     .000
                   +      1.0 02:101-102       48.13    2.412 No_date   28:03   24.10  n/a     .000
                SUM=      1.0 01:MH102         73.63    3.837 No_date   28:03   24.62  n/a     .000
R0002:C00305------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH102         73.63    3.837 No_date   28:03   24.62  n/a     .000
      fname :MH102.0002
      remark:Total Flows at MH102
R0002:C00306------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A5             1.60     .155 No_date   28:01   34.21 .752     .000
      [XIMP=.71:TIMP=.71]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 300.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0002:C00307------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:A4-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                   +      1.0 02:A5             1.60     .155 No_date   28:01   34.21  n/a     .000
                SUM=      1.0 01:A5T            1.60     .155 No_date   28:01   34.21  n/a     .000
R0002:C00308------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A5T            1.60     .155 No_date   28:01   34.21  n/a     .000
     Major System   /     1.0 02:A5-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A5-MN          1.60     .155 No_date   28:01   34.21  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00309------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH102         73.63    3.837 No_date   28:03   24.62  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:102-103       73.63    3.600 No_date   28:05   24.62  n/a     .000
      [L/S/n=  504./ .280/.013]
      {Vmax= 2.428:Dmax= 1.243}
      [Din= 1.50:Dused= 1.51]
R0002:C00310------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:102-103       73.63    3.600 No_date   28:05   24.62  n/a     .000
                   +      1.0 02:A5-MN          1.60     .155 No_date   28:01   34.21  n/a     .000
                SUM=      1.0 01:MH103         75.23    3.728 No_date   28:05   24.82  n/a     .000
R0002:C00311------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH103         75.23    3.728 No_date   28:05   24.82  n/a     .000
      fname :MH103.0002
      remark:Total Flows at MH103
R0002:C00312------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH103         75.23    3.728 No_date   28:05   24.82  n/a     .000
     [RDT= 1.00] out<-    1.0 01:103-104       75.23    3.629 No_date   28:07   24.82  n/a     .000
      [L/S/n=  438./ .460/.013]
      {Vmax= 3.024:Dmax=  .924}
      [Din= 1.65:Dused= 1.65]
R0002:C00313------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A6             1.56     .152 No_date   28:01   34.21 .752     .000
      [XIMP=.71:TIMP=.71]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 280.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0002:C00314------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:A5-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                   +      1.0 02:A6             1.56     .152 No_date   28:01   34.21  n/a     .000
                SUM=      1.0 01:A6T            1.56     .152 No_date   28:01   34.21  n/a     .000
R0002:C00315------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A6T            1.56     .152 No_date   28:01   34.21  n/a     .000
     Major System   /     1.0 02:A6-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A6-MN          1.56     .152 No_date   28:01   34.21  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00316------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:A6-MN          1.56     .152 No_date   28:01   34.21  n/a     .000
                   +      1.0 02:103-104       75.23    3.629 No_date   28:07   24.82  n/a     .000
                   +      1.0 02:TODD_MJn      30.23    2.154 No_date   28:03   29.64  n/a     .000
                SUM=      1.0 01:MH104        107.02    5.765 No_date   28:05   26.32  n/a     .000
R0002:C00317------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH104        107.02    5.765 No_date   28:05   26.32  n/a     .000
      fname :MH104.0002
      remark:Total Flows at MH104
R0002:C00318------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:B2            12.31     .731 No_date   28:03   25.66 .564     .000
      [XIMP=.41:TIMP=.54]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 417.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0002:C00319------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:B2            12.31     .731 No_date   28:03   25.66  n/a     .000
     Major System   /     1.0 02:B2-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:B2-MN         12.31     .731 No_date   28:03   25.66  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00320------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:B2-MN         12.31     .731 No_date   28:03   25.66  n/a     .000
     [RDT= 1.00] out<-    1.0 01:315-333       12.31     .675 No_date   28:04   25.66  n/a     .000
      [L/S/n=  254./ .100/.013]
      {Vmax= 1.136:Dmax=  .665}
      [Din= 1.20:Dused= 1.20]
R0002:C00321------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:B3             5.59     .346 No_date   28:02   25.66 .564     .000
      [XIMP=.41:TIMP=.54]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 345.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0002:C00322------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:B3             5.59     .346 No_date   28:02   25.66  n/a     .000
     Major System   /     1.0 02:B3-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:B3-MN          5.59     .346 No_date   28:02   25.66  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00323------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:B3-MN          5.59     .346 No_date   28:02   25.66  n/a     .000
                   +      1.0 02:315-333       12.31     .675 No_date   28:04   25.66  n/a     .000
                SUM=      1.0 01:MH333         17.90    1.009 No_date   28:04   25.66  n/a     .000
R0002:C00324------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH333         17.90    1.009 No_date   28:04   25.66  n/a     .000
      fname :MH333.0002
      remark:Total Flows at MH333
R0002:C00325------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH333         17.90    1.009 No_date   28:04   25.66  n/a     .000
     [RDT= 1.00] out<-    1.0 01:333-335       17.90     .937 No_date   28:05   25.66  n/a     .000
      [L/S/n=  251./ .100/.013]
      {Vmax= 1.217:Dmax=  .826}
      [Din= 1.20:Dused= 1.20]
R0002:C00326------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:333-335       17.90     .937 No_date   28:05   25.66  n/a     .000
     [RDT= 1.00] out<-    1.0 01:335-338       17.90     .888 No_date   28:07   25.66  n/a     .000
      [L/S/n=  185./ .100/.013]
      {Vmax= 1.199:Dmax=  .782}
      [Din= 1.20:Dused= 1.20]
R0002:C00327------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:335-338       17.90     .888 No_date   28:07   25.66  n/a     .000
     [RDT= 1.00] out<-    1.0 01:338-340       17.90     .838 No_date   28:08   25.66  n/a     .000
      [L/S/n=  233./ .100/.013]
      {Vmax= 1.194:Dmax=  .695}
      [Din= 1.35:Dused= 1.35]
R0002:C00328------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:B4             7.60     .459 No_date   28:02   25.66 .564     .000
      [XIMP=.41:TIMP=.54]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 388.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0002:C00329------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:B4             7.60     .459 No_date   28:02   25.66  n/a     .000
     Major System   /     1.0 02:B4-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:B4-MN          7.60     .459 No_date   28:02   25.66  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00330------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:338-340       17.90     .838 No_date   28:08   25.66  n/a     .000
                   +      1.0 02:B4-MN          7.60     .459 No_date   28:02   25.66  n/a     .000
                SUM=      1.0 01:MH340         25.50    1.234 No_date   28:05   25.66  n/a     .000
R0002:C00331------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH340         25.50    1.234 No_date   28:05   25.66  n/a     .000
      fname :MH340.0002
      remark:Total Flows at MH340
R0002:C00332------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH340         25.50    1.234 No_date   28:05   25.66  n/a     .000
     [RDT= 1.00] out<-    1.0 01:340-104       25.50    1.182 No_date   28:07   25.66  n/a     .000
      [L/S/n=  240./ .150/.013]
      {Vmax= 1.502:Dmax=  .672}
      [Din= 1.65:Dused= 1.65]
R0002:C00333------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:340-104       25.50    1.182 No_date   28:07   25.66  n/a     .000
                   +      1.0 02:MH104        107.02    5.765 No_date   28:05   26.32  n/a     .000
                SUM=      1.0 01:MH104T       132.52    6.925 No_date   28:05   26.19  n/a     .000
R0002:C00334------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH104T       132.52    6.925 No_date   28:05   26.19  n/a     .000
     [RDT= 1.00] out<-    1.0 01:104-105      132.52    6.452 No_date   28:06   26.19  n/a     .000
      [L/S/n=  380./ .100/.013]
      {Vmax= 1.871:Dmax= 1.542}
      {HGTH= 2.10:WDTH= 2.40}
R0002:C00335------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:B5             2.20     .187 No_date   28:00   29.51 .648     .000
      [XIMP=.57:TIMP=.57]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 187.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0002:C00336------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:B5             2.20     .187 No_date   28:00   29.51  n/a     .000
     Major System   /     1.0 02:B5-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:B5-MN          2.20     .187 No_date   28:00   29.51  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
```

```
R0002:C00337------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A8              .96     .099 No_date   28:00   34.21 .752     .000
      [XIMP=.71:TIMP=.71]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 186.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0002:C00338------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:A6-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                     +    1.0 02:A8              .96     .099 No_date   28:00   34.21  n/a     .000
                  SUM=    1.0 01:A8T             .96     .099 No_date   28:00   34.21  n/a     .000
R0002:C00339------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A8T             .96     .099 No_date   28:00   34.21  n/a     .000
     Major System   /     1.0 02:A8-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A8-MN           .96     .099 No_date   28:00   34.21  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00340------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:104-105      132.52    6.452 No_date   28:06   26.19  n/a     .000
                     +    1.0 02:B5-MN          2.20     .187 No_date   28:00   29.51  n/a     .000
                     +    1.0 02:A8-MN           .96     .099 No_date   28:00   34.21  n/a     .000
                     +    1.0 02:TODD_MN3j       .00     .000 No_date    0:00     .00  n/a     .000
                  SUM=    1.0 01:MH105        135.68    6.624 No_date   28:06   26.30  n/a     .000
R0002:C00341------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH105        135.68    6.624 No_date   28:06   26.30  n/a     .000
      fname :MH105.0002
      remark:Total Flows at MH105
R0002:C00342------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
 *  DIVERT HYD      ->    1.0 01:A8-MJ           .00     .000 No_date    0:00     .00  n/a     .000
           diverted <=    1.0 02:A8-MJ-JR        .00     .000 No_date    0:00     .00  n/a     .000
           diverted <=    1.0 03:A8-MJ-B6        .00     .000 No_date    0:00     .00  n/a     .000
R0002:C00343------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    DIVERT HYD      ->    1.0 01:MH105        135.68    6.624 No_date   28:06   26.30  n/a     .000
           diverted <=    1.0 02:MH105-JR      16.59    3.620 No_date   28:06   26.30  n/a     .000
           diverted <=    1.0 03:MH105-B6     119.09    3.004 No_date   28:06   26.30  n/a     .000
R0002:C00344------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:B7             7.19     .479 No_date   28:01   25.66 .564     .000
      [XIMP=.41:TIMP=.54]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 211.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0002:C00345------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:B4-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                     +    1.0 02:B7             7.19     .479 No_date   28:01   25.66  n/a     .000
                  SUM=    1.0 01:B7-B4MJ        7.19     .479 No_date   28:01   25.66  n/a     .000
R0002:C00346------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:B7-B4MJ        7.19     .479 No_date   28:01   25.66  n/a     .000
     Major System   /     1.0 02:B7R-MJ          .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:B7R-MN         7.19     .479 No_date   28:01   25.66  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00347------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:B7R-MN         7.19     .479 No_date   28:01   25.66  n/a     .000
     [RDT= 1.00] out<-    1.0 01:360-106A       7.19     .451 No_date   28:02   25.66  n/a     .000
      [L/S/n=  167./ .100/.013]
      {Vmax= 1.023:Dmax=  .558}
      [Din= 1.05:Dused= 1.05}
R0002:C00348------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:B6             3.29     .229 No_date   28:00   25.66 .564     .000
      [XIMP=.41:TIMP=.54]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 148.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0002:C00349------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:B6             3.29     .229 No_date   28:00   25.66  n/a     .000
     Major System   /     1.0 02:B6-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:B6-MN          3.29     .064 No_date   27:43   25.67  n/a     .000
      {MjSysSto=.1576E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00350------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:EX-LAND       32.50    2.093 No_date   28:02   26.85 .590     .000
      [XIMP=.50:TIMP=.50]
      [LOSS= 2 :CN= 74.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 465.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 36.67: SMAX=244.49: SK= .010]
R0002:C00351------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:EX-LAND       32.50    2.093 No_date   28:02   26.85  n/a     .000
     Major System   /     1.0 02:EX-LAND-MJ      .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:EX-LAND-MN    32.50    2.093 No_date   28:02   26.85  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00352------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:B7R-MJ          .00     .000 No_date    0:00     .00  n/a     .000
                     +    1.0 02:EX-LAND-MJ      .00     .000 No_date    0:00     .00  n/a     .000
                     +    1.0 02:B5-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                     +    1.0 02:B6-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                     +    1.0 02:B6-MN          3.29     .064 No_date   27:43   25.67  n/a     .000
                     +    1.0 02:A8-MJ-B6        .00     .000 No_date    0:00     .00  n/a     .000
                  SUM=    1.0 01:B6-B7ExMJ      3.29     .064 No_date   27:43   25.67  n/a     .000
R0002:C00353------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:B6-B7ExMJ      3.29     .064 No_date   27:43   25.67  n/a     .000
     Major System   /     1.0 02:B6R-MJ          .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:B6R-MN         3.29     .064 No_date   27:43   25.67  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00354------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH105-B6     119.09    3.004 No_date   28:06   26.30  n/a     .000
     [RDT= 1.00] out<-    1.0 01:105-106A     119.09    3.006 No_date   28:08   26.30  n/a     .000
      [L/S/n=  208./ .100/.013]
      {Vmax= 1.596:Dmax= 1.247}
      [Din= 1.80:Dused= 1.80}
R0002:C00355------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:360-106A       7.19     .451 No_date   28:02   25.66  n/a     .000
                     +    1.0 02:105-106A     119.09    3.006 No_date   28:08   26.30  n/a     .000
                     +    1.0 02:B6R-MN         3.29     .064 No_date   27:43   25.67  n/a     .000
                     +    1.0 02:B6R-MJ          .00     .000 No_date    0:00     .00  n/a     .000
                  SUM=    1.0 01:MH106A       129.57    3.466 No_date   28:03   26.25  n/a     .000
R0002:C00356------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH106A       129.57    3.466 No_date   28:03   26.25  n/a     .000
      fname :MH106A.0002
      remark:Total Flows at MH106A
R0002:C00357------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH106A       129.57    3.466 No_date   28:03   26.25  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:106A-106     129.57    3.450 No_date   28:04   26.25  n/a     .000
      [L/S/n=  190./ .100/.013]
      {Vmax= 1.626:Dmax= 1.406}
      [Din= 1.80:Dused= 1.80}
R0002:C00358------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A9             2.44     .240 No_date   28:01   34.21 .752     .000
      [XIMP=.71:TIMP=.71]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 262.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0002:C00359------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A9             2.44     .240 No_date   28:01   34.21  n/a     .000
     Major System   /     1.0 02:A9-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A9-MN          2.44     .240 No_date   28:01   34.21  n/a     .000
R0002:C00360------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:106A-106     129.57    3.450 No_date   28:04   26.25  n/a     .000
                     +    1.0 02:A9-MN          2.44     .240 No_date   28:01   34.21  n/a     .000
                  SUM=    1.0 01:MH106        132.01    3.666 No_date   28:03   26.40  n/a     .000
R0002:C00361------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH106        132.01    3.666 No_date   28:03   26.40  n/a     .000
      fname :MH106.0002
      remark:Total Flows at MH106
R0002:C00362------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH106        132.01    3.666 No_date   28:03   26.40  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:106-107      132.01    3.602 No_date   28:06   26.40  n/a     .000
      [L/S/n=  123./ .100/.013]
      {Vmax= 1.631:Dmax= 1.482}
      [Din= 1.80:Dused= 1.81}
R0002:C00363------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A10            4.14     .246 No_date   28:01   23.49 .516     .000
      [XIMP=.35:TIMP=.47]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 183.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0002:C00364------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A10            4.14     .246 No_date   28:01   23.49  n/a     .000
     Major System   /     1.0 02:A10-MJ          .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A10-MN         4.14     .246 No_date   28:01   23.49  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00365------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A11           10.61     .781 No_date   28:02   29.20 .642     .000
      [XIMP=.53:TIMP=.62]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 379.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0002:C00366------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A11           10.61     .781 No_date   28:02   29.20  n/a     .000
     Major System   /     1.0 02:A11-MJ          .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A11-MN        10.61     .781 No_date   28:02   29.20  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00367------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:106-107      132.01    3.602 No_date   28:06   26.40  n/a     .000
                     +    1.0 02:A10-MN         4.14     .246 No_date   28:01   23.49  n/a     .000
                     +    1.0 02:A11-MN        10.61     .781 No_date   28:02   29.20  n/a     .000
                  SUM=    1.0 01:MH107        146.76    4.589 No_date   28:02   26.52  n/a     .000
R0002:C00368------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH107        146.76    4.589 No_date   28:02   26.52  n/a     .000
      fname :MH107.0002
      remark:Total Flows at MH107
R0002:C00369------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH107        146.76    4.589 No_date   28:02   26.52  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:107-119      146.76    4.493 No_date   28:07   26.52  n/a     .000
      [L/S/n=  114./ .120/.013]
      {Vmax= 1.848:Dmax= 1.558}
      [Din= 1.80:Dused= 1.90}
R0002:C00370------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:107-119      146.76    4.493 No_date   28:07   26.52  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:119-108      146.76    4.469 No_date   28:07   26.52  n/a     .000
      [L/S/n=   66./ .120/.013]
      {Vmax= 1.838:Dmax= 1.546}
      [Din= 1.80:Dused= 1.88}
R0002:C00371------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A12           12.29     .834 No_date   28:01   25.66 .564     .000
      [XIMP=.41:TIMP=.54]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 183.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0002:C00372------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A12           12.29     .834 No_date   28:01   25.66  n/a     .000
     Major System   /     1.0 02:A12-MJ          .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A12-MN        12.29     .834 No_date   28:01   25.66  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00373------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A13            2.59     .239 No_date   28:02   34.21 .752     .000
      [XIMP=.71:TIMP=.71]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 379.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0002:C00374------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A13            2.59     .239 No_date   28:02   34.21  n/a     .000
     Major System   /     1.0 02:A13-MJ          .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A13-MN         2.59     .239 No_date   28:02   34.21  n/a     .000
R0002:C00375------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:Pond-Block     2.94     .190 No_date   28:01   24.31 .534     .000
      [XIMP=.41:TIMP=.41]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 183.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0002:C00376------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:119-108      146.76    4.469 No_date   28:07   26.52  n/a     .000
                     +    1.0 02:A13-MN         2.59     .239 No_date   28:02   34.21  n/a     .000
                     +    1.0 02:A12-MN        12.29     .834 No_date   28:01   25.66  n/a     .000
                  SUM=    1.0 01:MH108        161.64    5.450 No_date   28:03   26.58  n/a     .000
R0002:C00377------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH108        161.64    5.450 No_date   28:03   26.58  n/a     .000
      fname :MH108.0002
      remark:Total Flows at MH108
R0002:C00378------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH108        161.64    5.450 No_date   28:03   26.58  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:108-116      161.64    5.396 No_date   28:04   26.58  n/a     .000
      [L/S/n=   77./ .130/.013]
      {Vmax= 1.987:Dmax= 1.637}
      [Din= 1.80:Dused= 1.99}
R0002:C00379------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:108-116      161.64    5.396 No_date   28:04   26.58  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:116-corrig   161.64    5.363 No_date   28:04   26.58  n/a     .000
      [L/S/n=   80./ .130/.013]
      {Vmax= 1.983:Dmax= 1.631}
      [Din= 1.80:Dused= 1.99}
R0002:C00380------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:116-corrig   161.64    5.363 No_date   28:04   26.58  n/a     .000
                     +    1.0 02:Pond-Block     2.94     .190 No_date   28:01   24.31  n/a     .000
                  SUM=    1.0 01:Corrigan     164.58    5.522 No_date   28:04   26.54  n/a     .000
R0002:C00381------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:Corrigan     164.58    5.522 No_date   28:04   26.54  n/a     .000
      fname :Corrigan.0002
      remark:HYD_COMMENT=["Total Flows at Corrigan Pond]
R0002:C00382------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:Corrigan     164.58    5.522 No_date   28:04   26.54  n/a     .000
                out <=    1.0 01:Co-P         164.58    4.479 No_date   28:12   26.54  n/a     .000
           overflow <=    1.0 03:Co-P-OVF        .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.9246E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00383------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:Co-P-OVF        .00     .000 No_date    0:00     .00  n/a     .000
                     +    1.0 02:Co-P         164.58    4.479 No_date   28:12   26.54  n/a     .000
                     +    1.0 02:N_TO       54837.69   48.869 No_date   38:25   13.08  n/a     .000
                     +    1.0 02:MH105-JR      16.59    3.620 No_date   28:06   26.30  n/a     .000
                     +    1.0 02:A8-MJ-JR        .00     .000 No_date    0:00     .00  n/a     .000
                     +    1.0 02:A9-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                     +    1.0 02:A10-MJ          .00     .000 No_date    0:00     .00  n/a     .000
                     +    1.0 02:A11-MJ          .00     .000 No_date    0:00     .00  n/a     .000
                     +    1.0 02:A12-MJ          .00     .000 No_date    0:00     .00  n/a     .000
                     +    1.0 02:A13-MJ          .00     .000 No_date    0:00     .00  n/a     .000
                  SUM=    1.0 01:corrig     55018.86   49.076 No_date   38:24   13.13  n/a     .000
R0002:C00384------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:corrig     55018.86   49.076 No_date   38:24   13.13  n/a     .000
      fname :corrig.0002
      remark:Total Flows at Corrigan Pond
#*****************************************************************************
#    Corrigan Pond 1
#    - Rating curve obtained from Barrhaven South MSS modeling
#    - Tributary Drainage Area to MSS Pond 1 = 145 ha
#*****************************************************************************
#
# Hydrograph from Corrigan Drain routed to Jockvale Road
# Channel X-Section obtained from RVCA Hydraulic Model - Station 2462
#
R0002:C00385------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:corrig     55018.86   49.076 No_date   38:24   13.13  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N_MI       55018.86   49.073 No_date   38:28   13.13  n/a     .000
      [L/S/n=  580./ .445/.045]
      {Vmax= 1.454:Dmax= 1.223}
#*****************************************************************************
#    Catchment MILLS
#    - To SWM Facility north of the Jock
#    - Primarily residental development
#*****************************************************************************
R0002:C00386------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:MILLS        175.99    7.048 No_date   28:08   22.75 .500     .000
      [XIMP=.38:TIMP=.38]
      [LOSS= 2 :CN= 74.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI=1118.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 36.67: SMAX=244.49: SK= .010]
#*****************************************************************************
#    Chapman Mills SWM Pond
#    - Rating curve obtained from CCL hydraulic modeling
#*****************************************************************************
R0002:C00387------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:MILLS        175.99    7.048 No_date   28:08   22.75  n/a     .000
                out <=    1.0 01:MILL_P       175.99    2.401 No_date   28:46   22.75  n/a     .000
           overflow <=    1.0 03:MIL-OV          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.1446E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00388------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N_MI       55018.86   49.073 No_date   38:28   13.13  n/a     .000
                     +    1.0 02:MIL-OV          .00     .000 No_date    0:00     .00  n/a     .000
                     +    1.0 02:MILL_P       175.99    2.401 No_date   28:46   22.75  n/a     .000
                  SUM=    1.0 01:SN_MI      55194.85   49.303 No_date   38:26   13.16  n/a     .000
R0002:C00389------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_MI      55194.85   49.303 No_date   38:26   13.16  n/a     .000
      fname :SN_MI.0002
      remark:Total Flows at Jockvale Road
#
# Hydrograph from Jockvale Road routed to Heart's Desire
# Channel X-Section obtained from RVCA Hydraulic Model - Station 689
#
R0002:C00390------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_MI      55194.85   49.303 No_date   38:26   13.16  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N_DE       55194.85   49.262 No_date   38:53   13.16  n/a     .000
      [L/S/n= 1962./ .223/.045]
      {Vmax= 1.144:Dmax= 1.611}
#*****************************************************************************
#    Catchment DESIRE
#    - To Jock River (north of the Jock)
#    - Rural-estate subdivision (Heart's Desire Community)
#*****************************************************************************
R0002:C00391------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:DESIRE        23.78     .936 No_date   28:03   19.26 .423     .000
      [XIMP=.25:TIMP=.25]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 400.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
#*****************************************************************************
#    Catchment JOCKVA
#    - To Jockvale SWM Facility
#    - Residential development & golf course
#    - JFSA 2021-01-11 update JOCKVA after updating CORRIG as per IBI GROUP, July 2008.
#      JOCKVA area became 225.13 ha instead of 257.63 ha. JOCKVA separated into two areas JOCKVA and EX-LAND 32.5 ha as
#*****************************************************************************
R0002:C00392------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:JOCKVA       225.13   10.636 No_date   28:10   26.85 .590     .000
      [XIMP=.50:TIMP=.50]
      [LOSS= 2 :CN= 74.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI=1311.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 36.67: SMAX=244.49: SK= .010]
R0002:C00393------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:EX-LAND-MN    32.50    2.093 No_date   28:02   26.85  n/a     .000
                     +    1.0 02:JOCKVA       225.13   10.636 No_date   28:10   26.85  n/a     .000
                     +    1.0 02:B2-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                     +    1.0 02:B3-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                  SUM=    1.0 01:JOCKVA-TO    257.63   12.234 No_date   28:07   26.85  n/a     .000
R0002:C00394------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:JOCKVA-TO    257.63   12.234 No_date   28:07   26.85  n/a     .000
      fname :JOCKVA-TO.0002
      remark:Total Flows at KB first pond
#*****************************************************************************
#    Jockvale SWM Facility
#    - Rating curve obtained from Jockvale Servicing Study (CCL 1999)
#*****************************************************************************
R0002:C00395------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:JOCKVA-TO    257.63   12.234 No_date   28:07   26.85  n/a     .000
                out <=    1.0 01:JOCK_P       257.63    2.560 No_date   29:05   26.85  n/a     .000
```

```
             overflow <=    1.0 03:JO-OVF          .00     .000 No_date    0:00     .00  n/a     .000
        {MxStoUsed=.3334E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00396-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                 1.0 02:N_DE      55194.85   49.262 No_date   38:53   13.16  n/a     .000
                      +     1.0 02:DESIRE       23.78     .936 No_date   28:03   19.26  n/a     .000
                      +     1.0 02:JO-OVF         .00     .000 No_date    0:00     .00  n/a     .000
                      +     1.0 02:JOCK_P      257.63    2.560 No_date   29:05   26.85  n/a     .000
                   SUM=     1.0 01:SN_DE     55476.26   49.619 No_date   38:49   13.23  n/a     .000
R0002:C00397-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD                1.0 01:SN_DE     55476.26   49.619 No_date   38:49   13.23  n/a     .000
      fname :SN_DE.0002
      remark:Total Flows at Heart's Desire
#
# Hydrograph from Heart's Desire routed to Rideau River
# Channel X-Section obtained from RVCA Hydraulic Model - Station 0
#
R0002:C00398-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->      1.0 02:SN_DE     55476.26   49.619 No_date   38:49   13.23  n/a     .000
     [RDT= 1.00] out<-      1.0 01:N1        55476.26   49.617 No_date   38:54   13.23  n/a     .000
      [L/S/n=  563./ .967/.045]
      {Vmax= 1.490:Dmax=  .801}
#*****************************************************************************
#    Catchment S-2
#    - To Jock River (north and south)
#    - Undeveloped floodplain and river
#*****************************************************************************
R0002:C00399-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD       1.0 01:S-2         102.94    1.373 No_date   28:20   13.01 .286     .000
      [CN= 72.0: N= 3.00: Tp=  .40]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
R0002:C00400-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                 1.0 02:N1        55476.26   49.617 No_date   38:54   13.23  n/a     .000
                      +     1.0 02:S-2         102.94    1.373 No_date   28:20   13.01  n/a     .000
                   SUM=     1.0 01:SN_N1     55579.20   49.715 No_date   38:54   13.23  n/a     .000
R0002:C00401-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD                1.0 01:SN_N1     55579.20   49.715 No_date   38:54   13.23  n/a     .000
      fname :SN_N1.0002
      remark:Total Flows at Rideau River
##############################################################################
  ** END OF RUN :    4

*********************************************************************************************






 RUN#:COMMAND#
R0005:C00001-------------------------------------------------------------------------------------
     START
      [TZERO =    .00 hrs on       0]
      [METOUT=   2    (1=imperial, 2=metric output)]
      [NSTORM=   1 ]
      [NRUN  = 0005 ]
#*****************************************************************************
#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
#*****************************************************************************
#  Project Name: [Jock River]    Project Number: [1474-16]
#  Date        : 04-03-2021
#  Modeller    : [M.M.]
#  Company     : JFSAinc.
#  License #   :  2549237
#*****************************************************************************
# CALIBRATION OF SUMMER MODEL PARAMETERS
# USING CONTINUOUS SIMULATIONS
# Rainfall data from JFSA raingauge installed at site + other gauges by the City
# Use data collected from May 1st to July 14, 2003
# 2020-11-30 change TMJSTO in COMPUTE DUALHYD (TMJSTO = 0.1 instead of 0.0001)
# 2020-12-01 correct pond curve values
# 2020-12-01 change W_CLAR_BRAZ XIMP to 0.55, SLPI=[0.5](%) (impervious slope), and LGI up to 700m
# 2021-02-19 Change the slope for ROUTE CHANNEL Station 2462 (NHYDout=["N_TO"] ,NHYDin=["SN_TO"]) from 0.033 % (as per S
# 2021-02-19 Change the slope for ROUTE CHANNEL Station 5002 (NHYDout=["N_WC"] ,NHYDin=["SN_CE"]) from 0.01 % (as per St
# ---------------------------------------------------------------------------
R0005:C00002-------------------------------------------------------------------------------------
     READ STORM
      Filename = storm.001
      Comment  = Pluie SCS de 24 hres 1:5 ans pour Ottawa CDA
      [SDT=10.00:SDUR=  24.00:PTOT=  57.12]
R0005:C00003-------------------------------------------------------------------------------------
     MODIFY STORM
      [RFACT=  1.00:TSHIFT= 960.00 min]
      [SDT=10.00:SDUR=  40.00:PTOT=  57.12]
R0005:C00004-------------------------------------------------------------------------------------
     DEFAULT VALUES
      Filename = T:\PROJ\1474-16\Design\20201026-QuantityControlAnalysis\SWMHYMO\SMR-Model\updated3\CitiGate.DEF
      ICASEdv  = 1 (read and print data)
      FileTitle= File comment: [Based onvarious calibration exercises in Onta
                 THE FOLLOWING PARAMETERS ARE USED IN THE DESIGN STANDHYD COM
      Horton's infiltration equation parameters:
      [Fo= 76.20 mm/hr] [Fc=13.20 mm/hr] [DCAY= 4.14 /hr] [F=  .00 mm]
      Parameters for PERVIOUS surfaces in STANDHYD:
      [IAper=   4.67 mm] [LGP=50.00 m] [MNP= .250]
      Parameters for IMPERVIOUS surfaces in STANDHYD:
      [IAimp=   1.57 mm] [CLI= 1.50]   [MNI= .013]
      Parameters used in NASHYD:
      [Ia=   4.67 mm] [N= 3.00]
      Average monthly Pan Evaporation data in    (mm)
   JAN   FEB   MAR   APR   MAY   JUN   JUL   AUG   SEP   OCT   NOV   DEC
   .00   .00   .00   .00   .00   .00   .00   .00   .00   .00   .00   .00
      Average monthly Potential Evapotranspiration in    (mm)
   JAN   FEB   MAR   APR   MAY   JUN   JUL   AUG   SEP   OCT   NOV   DEC
   .00   .00   .00   .00   .00   .00   .00   .00   .00   .00   .00   .00
R0005:C00005-------------------------------------------------------------------------------------
     COMPUTE API
      [APIini= 50.00: APIkdy= .8500: APIkdt= .9989]
      {APImax= 90.83: APIavg= 60.09: APImin= 44.87}
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.32
R0005:C00006-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD       1.0 01:JR_HW      3680.00    9.398 No_date   37:02   16.41 .287     .000
      [CN= 64.0: N= 3.00: Tp= 7.13]
      [IaREC= 4.00: SMIN= 57.05: SMAX=380.32: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.32
R0005:C00007-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD       1.0 01:SW_13       971.00    3.405 No_date   32:36   15.29 .268     .000
      [CN= 61.0: N= 3.00: Tp= 3.76]
      [IaREC= 4.00: SMIN= 64.50: SMAX=430.01: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.80
R0005:C00008-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD       1.0 01:JR_GWM     3074.00    4.682 No_date   39:59   13.23 .232     .000
      [CN= 55.0: N= 3.00: Tp=11.33]
      [IaREC= 4.00: SMIN= 83.24: SMAX=554.96: SK= .010]
      [InterEventTime=  12.00]
R0005:C00009-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD       1.0 01:JR_ASH     1781.00    8.521 No_date   32:43   20.12 .352     .000
      [CN= 72.0: N= 3.00: Tp= 3.91]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
R0005:C00010-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD       1.0 01:SW_11       500.00    4.354 No_date   29:22   17.18 .301     .000
      [CN= 66.0: N= 3.00: Tp= 1.24]
      [IaREC= 4.00: SMIN= 52.62: SMAX=350.79: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.80
R0005:C00011-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD       1.0 01:NN_CK      1917.00    6.210 No_date   34:31   17.18 .301     .000
      [CN= 66.0: N= 3.00: Tp= 5.29]
      [IaREC= 4.00: SMIN= 52.62: SMAX=350.79: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.52
R0005:C00012-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD       1.0 01:SW_10      5666.00   16.924 No_date   38:02   20.12 .352     .000
      [CN= 72.0: N= 3.00: Tp= 8.00]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.75
R0005:C00013-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD       1.0 01:KG_CK      8376.00   16.342 No_date   39:59   17.18 .301     .000
      [CN= 66.0: N= 3.00: Tp=11.66]
      [IaREC= 4.00: SMIN= 52.62: SMAX=350.79: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.68
R0005:C00014-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD       1.0 01:SW_9       1132.00    6.963 No_date   30:55   19.24 .337     .000
      [CN= 70.0: N= 3.00: Tp= 2.51]
      [IaREC= 4.00: SMIN= 43.07: SMAX=287.10: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.82
R0005:C00015-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD       1.0 01:NC_CK      4464.00    8.109 No_date   39:59   15.66 .274     .000
      [CN= 62.0: N= 3.00: Tp=11.32]
      [IaREC= 4.00: SMIN= 61.90: SMAX=412.66: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.80
R0005:C00016-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD       1.0 01:SW_8        131.00    1.298 No_date   28:57   16.03 .281     .000
      [CN= 63.0: N= 3.00: Tp=  .90]
```

```
      [IaREC= 4.00: SMIN= 59.42: SMAX=396.11: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.65
R0005:C00017-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD       1.0 01:HB_DR      3854.00    9.385 No_date   38:41   17.18 .301     .000
      [CN= 66.0: N= 3.00: Tp= 8.42]
      [IaREC= 4.00: SMIN= 52.62: SMAX=350.79: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.82
R0005:C00018-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD       1.0 01:SW_7       3197.00    7.027 No_date   36:28   13.89 .243     .000
      [CN= 57.0: N= 3.00: Tp= 6.65]
      [IaREC= 4.00: SMIN= 76.32: SMAX=508.81: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.75
R0005:C00019-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD       1.0 01:SW_6        165.00     .641 No_date   33:06   17.58 .308     .000
      [CN= 67.0: N= 3.00: Tp= 4.18]
      [IaREC= 4.00: SMIN= 50.55: SMAX=336.97: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.67
R0005:C00020-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD       1.0 01:VG_DR      1332.00    4.803 No_date   35:19   20.12 .352     .000
      [CN= 72.0: N= 3.00: Tp= 5.95]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
R0005:C00021-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD       1.0 01:SW_5        224.00    4.100 No_date   28:45   22.97 .402     .000
      [CN= 77.0: N= 3.00: Tp=  .75]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.20
R0005:C00022-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD       1.0 01:FL_CK      4945.00   22.837 No_date   33:22   21.04 .368     .000
      [CN= 74.0: N= 3.00: Tp= 4.45]
      [IaREC= 4.00: SMIN= 36.67: SMAX=244.49: SK= .010]
      [InterEventTime=  12.00]
R0005:C00023-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD       1.0 01:SW_5A2       20.00     .483 No_date   28:36   25.62 .448     .000
      [CN= 81.0: N= 3.00: Tp=  .62]
      [IaREC= 4.00: SMIN= 25.21: SMAX=168.09: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.61
R0005:C00024-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD       1.0 01:SW_5A1     1412.00    4.646 No_date   37:58   21.98 .385     .000
      [CN= 75.0: N= 3.00: Tp= 8.00]
      [IaREC= 4.00: SMIN= 33.81: SMAX=225.43: SK= .010]
      [InterEventTime=  12.00]
R0005:C00025-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD       1.0 01:SW_4        585.00    6.688 No_date   29:57   25.62 .448     .000
      [CN= 81.0: N= 3.00: Tp= 1.75]
      [IaREC= 4.00: SMIN= 25.21: SMAX=168.09: SK= .010]
      [InterEventTime=  12.00]
R0005:C00026-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD       1.0 01:LM_CK      1021.00    8.861 No_date   30:48   25.07 .439     .000
      [CN= 80.0: N= 3.00: Tp= 2.46]
      [IaREC= 4.00: SMIN= 26.32: SMAX=175.50: SK= .010]
      [InterEventTime=  12.00]
R0005:C00027-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD       1.0 01:SW_2        177.00    3.240 No_date   28:45   22.97 .402     .000
      [CN= 77.0: N= 3.00: Tp=  .75]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0005:C00028-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD       1.0 01:SM_DR      1122.00    8.165 No_date   31:48   25.62 .448     .000
      [CN= 81.0: N= 3.00: Tp= 3.25]
      [IaREC= 4.00: SMIN= 25.21: SMAX=168.09: SK= .010]
      [InterEventTime=  12.00]
R0005:C00029-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD       1.0 01:MO_DR      2737.00   17.859 No_date   31:33   22.47 .393     .000
      [CN= 76.0: N= 3.00: Tp= 3.03]
      [IaREC= 4.00: SMIN= 32.46: SMAX=216.39: SK= .010]
      [InterEventTime=  12.00]
#
# Routing hydrographs
#
# Starting with the addition of Jock River Headwater and Subwatershed 13
#
R0005:C00030-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                 1.0 02:JR_HW      3680.00    9.398 No_date   37:02   16.41  n/a     .000
                      +     1.0 02:SW_13       971.00    3.405 No_date   32:36   15.29  n/a     .000
                   SUM=     1.0 01:S_N13      4651.00   11.949 No_date   35:33   16.17  n/a     .000
#
# Sum of hydrographs from Node 13 routed to Node 13A
# (Approximated cross-section - see cross-section 258)
# Use n=0.04 for summer conditions and n=0.025 for spring conditions
#
R0005:C00031-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->      1.0 02:S_N13      4651.00   11.949 No_date   35:33   16.17  n/a     .000
     [RDT= 1.00] out<-      1.0 01:N13A       4651.00    9.514 No_date   39:57   16.17  n/a     .000
      [L/S/n= 9074./ .022/.040]
      {Vmax=  .478:Dmax= 3.020}
#
# Addition of Subwatershed Jock River at Goodwood Marsh to Node 13A
#
R0005:C00032-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                 1.0 02:N13A       4651.00    9.514 No_date   39:57   16.17  n/a     .000
                      +     1.0 02:JR_GWM     3074.00    4.682 No_date   39:59   13.23  n/a     .000
                   SUM=     1.0 01:SN13A      7725.00   14.196 No_date   39:59   15.00  n/a     .000
#
# Insertion of a reservoir to simulate the effects of the Goodwood Marsh
#
R0005:C00033-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->      1.0 02:SN13A      7725.00   14.196 No_date   39:59   15.00  n/a     .000
                 out <=     1.0 01:RES_GM     7725.00    3.149 No_date   57:25   15.00  n/a     .000
     {MxStoUsed=.6321E+02  m3}
#
R0005:C00034-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD                1.0 01:RES_GM     7725.00    3.149 No_date   57:25   15.00  n/a     .000
      fname :H_RESGM
      remark:Outflow from Res GM
# Output of Reservoir Goodwood Marsh routed from Node 13A to Node 12
# (Approximated cross-section - see cross-section 258)
# Use n=0.04 for summer conditions and n=0.025 for spring conditions
R0005:C00035-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->      1.0 02:RES_GM     7725.00    3.149 No_date   57:25   15.00  n/a     .000
     [RDT= 1.00] out<-      1.0 01:N12        7725.00    3.137 No_date   60:12   15.00  n/a     .000
      [L/S/n= 5926./ .076/.040]
      {Vmax=  .527:Dmax= 1.429}
#
# Addition of Subwatershed Jock River at Ashton to Node 12
#
R0005:C00036-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                 1.0 02:N12        7725.00    3.137 No_date   60:12   15.00  n/a     .000
                      +     1.0 02:JR_ASH     1781.00    8.521 No_date   32:43   20.12  n/a     .000
                   SUM=     1.0 01:S_N12      9506.00   10.498 No_date   32:46   15.96  n/a     .000
R0005:C00037-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD                1.0 01:S_N12      9506.00   10.498 No_date   32:46   15.96  n/a     .000
      fname :H_SN12
      remark:flow at S_N12 near Ashton
#
# Sum of hydrographs from Node 12 routed to Node 11
# (Approximated cross-section - see cross-section 258)
# Use n=0.04 for summer conditions and n=0.025 for spring conditions
#
# Sum of hydrographs from Node 12 routed to Node 11 with Dummy section 248
#
R0005:C00038-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->      1.0 02:S_N12      9506.00   10.498 No_date   32:46   15.96  n/a     .000
     [RDT= 1.00] out<-      1.0 01:Dum11      9506.00   10.383 No_date   33:07   15.96  n/a     .000
      [L/S/n=  972./ .054/.040]
      {Vmax=  .648:Dmax= 2.406}
#
# Addition of Subwatershed 11 and No Name Creek to Node 11
#
R0005:C00039-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                 1.0 02:Dum11      9506.00   10.383 No_date   33:07   15.96  n/a     .000
                      +     1.0 02:SW_11       500.00    4.354 No_date   29:22   17.18  n/a     .000
                      +     1.0 02:NN_CK      1917.00    6.210 No_date   34:31   17.18  n/a     .000
                   SUM=     1.0 01:S_N11     11923.00   17.560 No_date   33:09   16.21  n/a     .000
#
# Sum of hydrographs from Node 11 routed to Node 10
# Section 1
#
R0005:C00040-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->      1.0 02:S_N11     11923.00   17.560 No_date   33:09   16.21  n/a     .000
     [RDT= 1.00] out<-      1.0 01:N10       11923.00   12.006 No_date   38:17   16.21  n/a     .000
      [L/S/n=14028./ .157/.040]
      {Vmax=  .461:Dmax= 1.087}
#
# Addition of Subwatershed 10 to Node 10
#
R0005:C00041-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                 1.0 02:N10       11923.00   12.006 No_date   38:17   16.21  n/a     .000
                      +     1.0 02:SW_10      5666.00   16.924 No_date   38:02   20.12  n/a     .000
                   SUM=     1.0 01:S_N10     17589.00   28.927 No_date   38:09   17.47  n/a     .000
R0005:C00042-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD                1.0 01:S_N10     17589.00   28.927 No_date   38:09   17.47  n/a     .000
      fname :H_SN10
      remark:flow at S_N10: N10 + SW_10
# Addition of Kings Creek to S_N10
#
R0005:C00043-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                 1.0 02:S_N10     17589.00   28.927 No_date   38:09   17.47  n/a     .000
                      +     1.0 02:KG_CK      8376.00   16.342 No_date   39:59   17.18  n/a     .000
```

```
                   SUM=     1.0 01:S_N10A     25965.00   44.722 No_date   39:35   17.37  n/a     .000
#
# Sum of hydrographs from Node 10 routed to Node 9
# Section 2
#
R0005:C00044------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N10A     25965.00   44.722 No_date   39:35   17.37  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N9         25965.00   43.534 No_date   39:59   17.37  n/a     .000
      [L/S/n= 3982./ .075/.040]
      {Vmax=  .664:Dmax= 1.502}
#
# Addition of Subwatershed 9 and Nichols Creek to Node 9
#
R0005:C00045------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                 1.0 02:N9         25965.00   43.534 No_date   39:59   17.37  n/a     .000
                      +     1.0 02:SW_9        1132.00    6.963 No_date   30:55   19.24  n/a     .000
                      +     1.0 02:NC_CK       4464.00    8.109 No_date   39:59   15.66  n/a     .000
                   SUM=     1.0 01:S_N9       31561.00   53.366 No_date   39:59   17.20  n/a     .000
#
# Sum of hydrographs from Node 9 routed to Node 8
# Section 3
#
R0005:C00046------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N9       31561.00   53.366 No_date   39:59   17.20  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N8         31561.00   49.404 No_date   39:59   17.20  n/a     .000
      [L/S/n= 2269./ .088/.045]
      {Vmax=  .370:Dmax= 1.520}
#
# Addition of Subwatershed 8 and Hobb's Drain to Node 8
#
R0005:C00047------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                 1.0 02:N8         31561.00   49.404 No_date   39:59   17.20  n/a     .000
                      +     1.0 02:SW_8         131.00    1.298 No_date   28:57   16.03  n/a     .000
                      +     1.0 02:HB_DR       3854.00    9.385 No_date   38:41   17.18  n/a     .000
                   SUM=     1.0 01:S_N8       35546.00   58.845 No_date   39:59   17.19  n/a     .000
#
# Sum of hydrographs from Node 8 routed to Node 7
# Section 4
#
R0005:C00048------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N8       35546.00   58.845 No_date   39:59   17.19  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N7         35546.00   48.127 No_date   45:08   17.19  n/a     .000
      [L/S/n= 3750./ .053/.070]
      {Vmax=  .208:Dmax= 1.855}
#
# Addition of Subwatershed 7 to Node 7
#
R0005:C00049------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                 1.0 02:N7         35546.00   48.127 No_date   45:08   17.19  n/a     .000
                      +     1.0 02:SW_7        3197.00    7.027 No_date   36:28   13.89  n/a     .000
                   SUM=     1.0 01:S_N7       38743.00   51.395 No_date   44:14   16.92  n/a     .000
R0005:C00050------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD                1.0 01:S_N7       38743.00   51.395 No_date   44:14   16.92  n/a     .000
      fname :H_SN7
      remark:flow at S_N7: N7 + SW_7
# Insertion of a reservoir to simulate the effects of the Richmond Fen.
# Storage area and volumes were estimated from available topo maps.
# Release rate from fen was assumed to be controlled by the downstream
# river cross-section for summer conditions.  It is was assumed that for up to
# 0.75 m of water, the main channel of the river provided the storage.  Above
# this depth, the wetland starts to signigicantly store water.
#
R0005:C00051------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:S_N7       38743.00   51.395 No_date   44:14   16.92  n/a     .000
                 out <=   1.0 01:RES_RF     38743.00   27.976 No_date   59:12   16.92  n/a     .000
     {MxStoUsed=.1784E+03  m3}
R0005:C00052------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD                1.0 01:RES_RF     38743.00   27.976 No_date   59:12   16.92  n/a     .000
      fname :H_ResRF
      remark:outflow of Richmond Fen
#
# Sum of hydrographs from Node 7 routed to Node 6
# Section 5
#
R0005:C00053------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:RES_RF     38743.00   27.976 No_date   59:12   16.92  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N6         38743.00   27.930 No_date   60:29   16.92  n/a     .000
      [L/S/n= 3056./ .082/.025]
      {Vmax=  .460:Dmax=  .895}
#
# Addition of Subwatershed 6 and Van Gaal Drain to Node 6
#
R0005:C00054------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                 1.0 02:N6         38743.00   27.930 No_date   60:29   16.92  n/a     .000
                      +     1.0 02:SW_6         165.00     .641 No_date   33:06   17.58  n/a     .000
                      +     1.0 02:VG_DR       1332.00    4.803 No_date   35:19   20.12  n/a     .000
                   SUM=     1.0 01:S_N6       40240.01   27.944 No_date   60:06   17.03  n/a     .000
#
# Sum of hydrographs from Node 6 routed to Node 5
# Section 6
#
R0005:C00055------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N6       40240.01   27.944 No_date   60:06   17.03  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N5         40240.01   27.922 No_date   60:57   17.03  n/a     .000
      [L/S/n= 1852./ .054/.035]
      {Vmax=  .397:Dmax= 1.002}
#
# Addition of Subwatershed 5 and Flowing Creek to Node 5
#
R0005:C00056------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                 1.0 02:N5         40240.01   27.922 No_date   60:57   17.03  n/a     .000
                      +     1.0 02:SW_5         224.00    4.100 No_date   28:45   22.97  n/a     .000
                      +     1.0 02:FL_CK       4945.00   22.837 No_date   33:22   21.04  n/a     .000
                   SUM=     1.0 01:S_N5       45409.01   43.566 No_date   35:28   17.49  n/a     .000
#
# Sum of hydrographs from Node 5 routed to Node 5A
# Section 7
#
R0005:C00057------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N5       45409.01   43.566 No_date   35:28   17.49  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N5A        45409.01   43.490 No_date   35:47   17.49  n/a     .000
      [L/S/n=  556./ .090/.040]
      {Vmax=  .465:Dmax= 1.060}
#
# Addition of Subwatershed 5A1 and Subwatershed 5A2 to Node 5A
#
R0005:C00058------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                 1.0 02:N5A        45409.01   43.490 No_date   35:47   17.49  n/a     .000
                      +     1.0 02:SW_5A2        20.00     .483 No_date   28:36   25.62  n/a     .000
                      +     1.0 02:SW_5A1      1412.00    4.646 No_date   37:58   21.98  n/a     .000
                   SUM=     1.0 01:S_N5A      46841.01   47.976 No_date   35:58   17.63  n/a     .000
#
# Sum of hydrographs from Node 5A routed to Node 4
# Section 8
#
R0005:C00059------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N5A      46841.01   47.976 No_date   35:58   17.63  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N4         46841.01   46.217 No_date   37:26   17.63  n/a     .000
      [L/S/n= 4630./ .043/.035]
      {Vmax=  .756:Dmax= 3.116}
#
# Addition of Subwatershed 4 and Leamy Creek to Node 4
#
R0005:C00060------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                 1.0 02:N4         46841.01   46.217 No_date   37:26   17.63  n/a     .000
                      +     1.0 02:SW_4         585.00    6.688 No_date   29:57   25.62  n/a     .000
                      +     1.0 02:LM_CK       1021.00    8.861 No_date   30:48   25.07  n/a     .000
                   SUM=     1.0 01:S_N4       48447.00   50.308 No_date   36:47   17.89  n/a     .000
R0005:C00061------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD                1.0 01:S_N4       48447.00   50.308 No_date   36:47   17.89  n/a     .000
      fname :S_N4.0005
      remark:flow at S_N4
#
# Sum of hydrographs from Node 4 routed to Node 2
# Section 9
#
R0005:C00062------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N4       48447.00   50.308 No_date   36:47   17.89  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N2         48447.00   50.131 No_date   37:08   17.89  n/a     .000
      [L/S/n= 1667./ .060/.040]
      {Vmax=  .781:Dmax= 3.131}
#
# Addition of Subwatershed 2 with Monohan Drain and Smith Drain to Node 2
#
R0005:C00063------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                 1.0 02:N2         48447.00   50.131 No_date   37:08   17.89  n/a     .000
                      +     1.0 02:SW_2         177.00    3.240 No_date   28:45   22.97  n/a     .000
                      +     1.0 02:SM_DR       1122.00    8.165 No_date   31:48   25.62  n/a     .000
                      +     1.0 02:MO_DR       2737.00   17.859 No_date   31:33   22.47  n/a     .000
                   SUM=     1.0 01:S_N2       52483.00   67.222 No_date   33:17   18.31  n/a     .000
R0005:C00064------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD                1.0 01:S_N2       52483.00   67.222 No_date   33:17   18.31  n/a     .000
      fname :H_SN2
      remark:flow at S_N2 Jock River Gauge at Moodie Dr.
#
# Sum of hydrographs from Node 2 routed to Node 1
# Section 10
#
#*******************************************************************************
#
# Hydrograph from Node 2 routed to Node 416
# Channel X-Section obtained from RVCA Hydraulic Model - Station 9025
#
R0005:C00065------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N2       52483.00   67.222 No_date   33:17   18.31  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N_416      52483.00   65.664 No_date   34:34   18.31  n/a     .000
      [L/S/n= 2327./ .050/.055]
      {Vmax=  .658:Dmax= 2.660}
#*******************************************************************************
#    Catchment SW-1a
#    - Portion of RVCA catchment SW_1 outside of Reach 1 subwatershed
#    - Undeveloped agricultural land
#*******************************************************************************
R0005:C00066------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_1a        536.42    3.012 No_date   31:18   19.00 .333     .000
      [CN= 72.0: N= 3.00: Tp= 2.79]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
R0005:C00067------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:S-1-Okeefe    44.93     .602 No_date   29:08   21.69 .380     .000
      [CN= 77.0: N= 3.00: Tp= 1.05]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0005:C00068------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                 1.0 02:N_416      52483.00   65.664 No_date   34:34   18.31  n/a     .000
                      +     1.0 02:SW_1a        536.42    3.012 No_date   31:18   19.00  n/a     .000
                      +     1.0 02:S-1-Okeefe    44.93     .602 No_date   29:08   21.69  n/a     .000
                   SUM=     1.0 01:SN_416     53064.36   67.933 No_date   34:06   18.32  n/a     .000
R0005:C00069------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD                1.0 01:SN_416     53064.36   67.933 No_date   34:06   18.32  n/a     .000
      fname :SN_416.0005
      remark:Total Flows at Highway 416
#
# Hydrograph from Node 416 routed to Node at Okeefe drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 7245
#
R0005:C00070------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_416     53064.36   67.933 No_date   34:06   18.32  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N_OK       53064.36   67.890 No_date   34:06   18.32  n/a     .000
      [L/S/n=  497./ .302/.055]
      {Vmax= 1.355:Dmax= 2.252}
#*******************************************************************************
#    Catchment OKEEFE
#    - To O'Keefe drain (north of the Jock)
#    - Developed with assumed 43% imp.
#    - 2020-12-01 add Okeefe model (Area 513.02 HA) instead of current Okeefe (Area 513.02 HA)
#    - 2020-11-20 Okeefe detailed model was added as per the NOVATECH SWMHYMO model (Citi-Gate 2014).
#*******************************************************************************
R0005:C00071------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:O-1           63.72     .514 No_date   28:59   13.88 .243     .000
      [CN= 61.0: N= 3.00: Tp=  .90]
      [IaREC= 4.00: SMIN= 64.50: SMAX=430.01: SK= .010]
      [InterEventTime=  12.00]
R0005:C00072------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:O-1           63.72     .514 No_date   28:59   13.88  n/a     .000
     [RDT= 1.00] out<-    1.0 01:O-1R          63.72     .470 No_date   29:19   13.88  n/a     .000
      [L/S/n=  960./ .630/.043]
      {Vmax=  .682:Dmax=  .283}
R0005:C00073------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:O-2           28.61     .183 No_date   29:14   12.96 .227     .000
      [CN= 57.0: N= 3.00: Tp= 1.10]
      [IaREC= 4.00: SMIN= 76.32: SMAX=508.81: SK= .010]
      [InterEventTime=  12.00]
R0005:C00074------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:O-4           46.94     .222 No_date   29:01    9.87 .173     .000
      [CN= 49.0: N= 3.00: Tp=  .90]
      [IaREC= 4.00: SMIN=104.59: SMAX=697.25: SK= .010]
      [InterEventTime=  12.00]
R0005:C00075------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                 1.0 02:O-1R          63.72     .470 No_date   29:19   13.88  n/a     .000
                      +     1.0 02:O-2           28.61     .183 No_date   29:14   12.96  n/a     .000
                      +     1.0 02:O-4           46.94     .222 No_date   29:01    9.87  n/a     .000
                   SUM=     1.0 01:OKF-N        139.27     .867 No_date   29:14   12.34  n/a     .000
R0005:C00076------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:OKF-N        139.27     .867 No_date   29:14   12.34  n/a     .000
     [RDT= 1.00] out<-    1.0 01:OKF-NR       139.27     .866 No_date   29:17   12.34  n/a     .000
      [L/S/n=  210./ .810/.043]
      {Vmax=  .853:Dmax=  .550}
R0005:C00077------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:O-6           16.46     .074 No_date   28:46    8.71 .152     .000
      [CN= 43.0: N= 3.00: Tp=  .70]
      [IaREC= 4.00: SMIN=134.47: SMAX=896.47: SK= .010]
      [InterEventTime=  12.00]
R0005:C00078------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:O-3           39.67     .605 No_date   28:25   15.80 .277     .000
      [XIMP=.15:TIMP=.30]
      [LOSS= 2 :CN= 50.0]
      [Pervious     area: IAper= 4.67:SLPP= .32:LGP= 440.:MNP=.035:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .32:LGI=1880.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 99.77: SMAX=665.12: SK= .010]
R0005:C00079------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:O-5           60.63    1.453 No_date   28:11   17.75 .311     .000
      [XIMP=.13:TIMP=.26]
      [LOSS= 2 :CN= 61.0]
      [Pervious     area: IAper= 4.67:SLPP=1.38:LGP= 550.:MNP=.035:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.38:LGI=1450.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 64.50: SMAX=430.01: SK= .010]
R0005:C00080------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                 1.0 02:OKF-NR       139.27     .866 No_date   29:17   12.34  n/a     .000
                      +     1.0 02:O-3           39.67     .605 No_date   28:25   15.80  n/a     .000
                      +     1.0 02:O-5           60.63    1.453 No_date   28:11   17.75  n/a     .000
                      +     1.0 02:O-6           16.46     .074 No_date   28:46    8.71  n/a     .000
                   SUM=     1.0 01:PT1          256.03    2.312 No_date   28:24   13.92  n/a     .000
R0005:C00081------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:O-7            5.28     .041 No_date   28:37   11.36 .199     .000
      [CN= 54.0: N= 3.00: Tp=  .60]
      [IaREC= 4.00: SMIN= 87.01: SMAX=580.07: SK= .010]
      [InterEventTime=  12.00]
R0005:C00082------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                 1.0 02:PT1          256.03    2.312 No_date   28:24   13.92  n/a     .000
                      +     1.0 02:O-7            5.28     .041 No_date   28:37   11.36  n/a     .000
                   SUM=     1.0 01:FF           261.31    2.351 No_date   28:25   13.87  n/a     .000
R0005:C00083------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:FF           261.31    2.351 No_date   28:25   13.87  n/a     .000
     [RDT= 1.00] out<-    1.0 01:DRAIN1       261.31    2.298 No_date   28:31   13.87  n/a     .000
      [L/S/n=  302./1.000/.043]
      {Vmax=  .817:Dmax=  .624}
R0005:C00084------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:D1             1.17     .044 No_date   28:12   23.49 .411     .000
      [CN= 84.0: N= 3.00: Tp=  .28]
      [IaREC= 4.00: SMIN= 21.09: SMAX=140.62: SK= .010]
      [InterEventTime=  12.00]
R0005:C00085------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A1             2.50     .337 No_date   28:01   44.03 .771     .000
      [XIMP=.68:TIMP=.85]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 224.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0005:C00086------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:A1             2.50     .337 No_date   28:01   44.03  n/a     .000
                 out <=   1.0 01:A1-STR         2.50     .076 No_date   28:28   44.03  n/a     .000
            overflow <=   1.0 03:A1-OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.5227E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00087------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:ST-2            .59     .062 No_date   28:00   33.25 .582     .000
      [XIMP=.46:TIMP=.57]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 109.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0005:C00088------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:ST-2            .59     .062 No_date   28:00   33.25  n/a     .000
                 out <=   1.0 01:ST2STR          .59     .052 No_date   28:03   33.25  n/a     .000
            overflow <=   1.0 03:ST2OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.1200E-02  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00089------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:O-8           60.55     .658 No_date   29:05   18.08 .317     .000
      [CN= 69.0: N= 3.00: Tp= 1.00]
      [IaREC= 4.00: SMIN= 44.82: SMAX=298.82: SK= .010]
      [InterEventTime=  12.00]
R0005:C00090------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:O-8           60.55     .658 No_date   29:05   18.08  n/a     .000
     [RDT= 1.00] out<-    1.0 01:O8PIPE        60.55     .654 No_date   29:09   18.08  n/a     .000
      [L/S/n=  335./ .100/.013]
      {Vmax=  .991:Dmax=  .368}
      {HGTH= 1.20:WDTH= 1.80}
R0005:C00091------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                 1.0 02:DRAIN1       261.31    2.298 No_date   28:31   13.87  n/a     .000
                      +     1.0 02:D1             1.17     .044 No_date   28:12   23.49  n/a     .000
                      +     1.0 02:A1-STR         2.50     .076 No_date   28:28   44.03  n/a     .000
                      +     1.0 02:A1-OVF          .00     .000 No_date    0:00     .00  n/a     .000
                      +     1.0 02:ST2STR          .59     .052 No_date   28:03   33.25  n/a     .000
                      +     1.0 02:ST2OVF          .00     .000 No_date    0:00     .00  n/a     .000
                      +     1.0 02:O8PIPE        60.55     .654 No_date   29:09   18.08  n/a     .000
                   SUM=     1.0 01:ST2-IN       326.12    2.907 No_date   28:39   14.95  n/a     .000
R0005:C00092------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A7             3.51     .460 No_date   28:02   44.03 .771     .000
      [XIMP=.68:TIMP=.85]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 265.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0005:C00093------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:A7             3.51     .460 No_date   28:02   44.03  n/a     .000
                 out <=   1.0 01:A7-STR         3.51     .108 No_date   28:29   44.03  n/a     .000
            overflow <=   1.0 03:A7-OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.7349E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00094------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:ST-3            .71     .073 No_date   28:00   33.25 .582     .000
      [XIMP=.46:TIMP=.57]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 119.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0005:C00095------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:ST-3            .71     .073 No_date   28:00   33.25  n/a     .000
                 out <=   1.0 01:ST3STR          .71     .063 No_date   28:03   33.25  n/a     .000
            overflow <=   1.0 03:ST3OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.1203E-02  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00096------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                 1.0 02:ST2-IN       326.12    2.907 No_date   28:39   14.95  n/a     .000
                      +     1.0 02:A7-STR         3.51     .108 No_date   28:29   44.03  n/a     .000
                      +     1.0 02:A7-OVF          .00     .000 No_date    0:00     .00  n/a     .000
                      +     1.0 02:ST3STR          .71     .063 No_date   28:03   33.25  n/a     .000
                      +     1.0 02:ST3OVF          .00     .000 No_date    0:00     .00  n/a     .000
                   SUM=     1.0 01:PT2ST3       330.34    3.026 No_date   28:38   15.30  n/a     .000
R0005:C00097------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:PT2ST3       330.34    3.026 No_date   28:38   15.30  n/a     .000
     [RDT= 1.00] out<-    1.0 01:DRAIN2       330.34    2.842 No_date   29:04   15.30  n/a     .000
      [L/S/n=  592./ .230/.043]
      {Vmax=  .607:Dmax=  .930}
```

```
R0005:C00098-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:D2             2.28     .035 No_date   29:05   23.49 .411     .000
      [CN= 84.0: N= 3.00: Tp=  .99]
      [IaREC= 4.00: SMIN= 21.09: SMAX=140.62: SK= .010]
      [InterEventTime=  12.00]
R0005:C00099-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A17           12.04    1.379 No_date   28:04   44.03 .771     .000
      [XIMP=.68:TIMP=.85]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 491.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0005:C00100-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:A17           12.04    1.379 No_date   28:04   44.03  n/a     .000
                out <=    1.0 01:A17STR        12.04     .353 No_date   28:36   44.03  n/a     .000
           overflow <=    1.0 03:A17OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.2492E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00101-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:ST-4            .35     .038 No_date   28:00   33.25 .582     .000
      [XIMP=.46:TIMP=.57]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=  84.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0005:C00102-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:ST-4            .35     .038 No_date   28:00   33.25  n/a     .000
                out <=    1.0 01:ST4STR          .35     .031 No_date   28:03   33.25  n/a     .000
           overflow <=    1.0 03:ST4OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.1040E-02  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00103-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A18            5.30     .671 No_date   28:02   44.03 .771     .000
      [XIMP=.68:TIMP=.85]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 326.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0005:C00104-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:A18            5.30     .671 No_date   28:02   44.03  n/a     .000
                out <=    1.0 01:A18STR         5.30     .160 No_date   28:31   44.03  n/a     .000
           overflow <=    1.0 03:A18OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.1108E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00105-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:DRAIN2       330.34    2.842 No_date   29:04   15.30  n/a     .000
                    +     1.0 02:D2             2.28     .035 No_date   29:05   23.49  n/a     .000
                    +     1.0 02:A17STR        12.04     .353 No_date   28:36   44.03  n/a     .000
                    +     1.0 02:A17OVF          .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:ST4STR          .35     .031 No_date   28:03   33.25  n/a     .000
                    +     1.0 02:ST4OVF          .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:A18STR         5.30     .160 No_date   28:31   44.03  n/a     .000
                    +     1.0 02:A18OVF          .00     .000 No_date    0:00     .00  n/a     .000
                 SUM=     1.0 01:PT3ST4       350.31    3.317 No_date   28:57   16.79  n/a     .000
R0005:C00106-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:PT3ST4       350.31    3.317 No_date   28:57   16.79  n/a     .000
     [RDT= 1.00] out<-    1.0 01:DRAIN3       350.31    3.191 No_date   29:19   16.79  n/a     .000
      [L/S/n=  525./ .230/.043]
      {Vmax=  .635:Dmax=  .979}
R0005:C00107-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:D3             2.51     .055 No_date   28:45   25.92 .454     .000
      [CN= 86.0: N= 3.00: Tp=  .73]
      [IaREC= 4.00: SMIN= 17.43: SMAX=116.21: SK= .010]
      [InterEventTime=  12.00]
R0005:C00108-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:C1             3.41     .450 No_date   28:01   44.03 .771     .000
      [XIMP=.68:TIMP=.85]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 261.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0005:C00109-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:C1             3.41     .450 No_date   28:01   44.03  n/a     .000
                out <=    1.0 01:C1-STR         3.41     .104 No_date   28:29   44.03  n/a     .000
           overflow <=    1.0 03:C1-OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.7123E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00110-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:ST-5            .45     .048 No_date   28:00   33.25 .582     .000
      [XIMP=.46:TIMP=.57]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=  95.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0005:C00111-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:ST-5            .45     .048 No_date   28:00   33.25  n/a     .000
                out <=    1.0 01:ST5STR          .45     .040 No_date   28:03   33.25  n/a     .000
           overflow <=    1.0 03:ST5OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.1108E-02  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00112-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:DRAIN3       350.31    3.191 No_date   29:19   16.79  n/a     .000
                    +     1.0 02:D3             2.51     .055 No_date   28:45   25.92  n/a     .000
                    +     1.0 02:C1-STR         3.41     .104 No_date   28:29   44.03  n/a     .000
                    +     1.0 02:C1-OVF          .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:ST5STR          .45     .040 No_date   28:03   33.25  n/a     .000
                    +     1.0 02:ST5OVF          .00     .000 No_date    0:00     .00  n/a     .000
                 SUM=     1.0 01:ST5-E        356.68    3.312 No_date   29:13   17.14  n/a     .000
R0005:C00113-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:STRAND         7.59     .640 No_date   28:12   42.86 .750     .000
      [XIMP=.64:TIMP=.85]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1230.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0005:C00114-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:STRAND         7.59     .640 No_date   28:12   42.86  n/a     .000
                out <=    1.0 01:S-POND         7.59     .048 No_date   29:55   42.86  n/a     .000
           overflow <=    1.0 03:S-OVF           .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.2288E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00115-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:ST5-E        356.68    3.312 No_date   29:13   17.14  n/a     .000
                    +     1.0 02:S-POND         7.59     .048 No_date   29:55   42.86  n/a     .000
                    +     1.0 02:S-OVF           .00     .000 No_date    0:00     .00  n/a     .000
                 SUM=     1.0 01:SSAOUT       364.27    3.358 No_date   29:13   17.68  n/a     .000
R0005:C00116-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SSAOUT       364.27    3.358 No_date   29:13   17.68  n/a     .000
      fname :SSAOUT.0005
      remark:SSAOUT
R0005:C00117-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:Area-A        66.75    5.433 No_date   28:11   42.06 .736     .000
      [XIMP=.64:TIMP=.80]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1155.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0005:C00118-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:Area-A        66.75    5.433 No_date   28:11   42.06  n/a     .000
      fname :Area-A.0005
      remark:SMWF-A Inflow
R0005:C00119-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:Area-A        66.75    5.433 No_date   28:11   42.06  n/a     .000
                out <=    1.0 01:SWMF-A        66.75     .298 No_date   30:20   42.06  n/a     .000
           overflow <=    1.0 03:SWMAOV          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.2106E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00120-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SWMF-A        66.75     .298 No_date   30:20   42.06  n/a     .000
      fname :SWMF-A.0005
      remark:SMWF-A Outflow
R0005:C00121-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:SSAOUT       364.27    3.358 No_date   29:13   17.68  n/a     .000
                    +     1.0 02:SWMF-A        66.75     .298 No_date   30:20   42.06  n/a     .000
                    +     1.0 02:SWMAOV          .00     .000 No_date    0:00     .00  n/a     .000
                 SUM=     1.0 01:PT4ST5       431.02    3.613 No_date   29:19   21.45  n/a     .000
R0005:C00122-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:C6             1.87     .260 No_date   28:01   44.03 .771     .000
      [XIMP=.68:TIMP=.85]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 193.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0005:C00123-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:C6             1.87     .260 No_date   28:01   44.03  n/a     .000
                out <=    1.0 01:C6-STR         1.87     .058 No_date   28:26   44.03  n/a     .000
           overflow <=    1.0 03:C6-OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.3924E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00124-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:C7             1.62     .227 No_date   28:01   44.03 .771     .000
      [XIMP=.68:TIMP=.85]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 180.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0005:C00125-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:C7             1.62     .227 No_date   28:01   44.03  n/a     .000
                out <=    1.0 01:C7-STR         1.62     .050 No_date   28:26   44.03  n/a     .000
           overflow <=    1.0 03:C7-OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.3391E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00126-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:ST-6            .41     .044 No_date   28:00   33.25 .582     .000
      [XIMP=.46:TIMP=.57]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=  91.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0005:C00127-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:ST-6            .41     .044 No_date   28:00   33.25  n/a     .000
                out <=    1.0 01:ST6STR          .41     .036 No_date   28:03   33.25  n/a     .000
           overflow <=    1.0 03:ST6OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.1092E-02  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00128-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:PT4ST5       431.02    3.613 No_date   29:19   21.45  n/a     .000
                    +     1.0 02:C6-STR         1.87     .058 No_date   28:26   44.03  n/a     .000
                    +     1.0 02:C6-OVF          .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:C7-STR         1.62     .050 No_date   28:26   44.03  n/a     .000
                    +     1.0 02:C7-OVF          .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:ST6STR          .41     .036 No_date   28:03   33.25  n/a     .000
                    +     1.0 02:ST6OVF          .00     .000 No_date    0:00     .00  n/a     .000
                 SUM=     1.0 01:PT5ST6       434.92    3.684 No_date   29:13   21.64  n/a     .000
R0005:C00129-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:PT5ST6       434.92    3.684 No_date   29:13   21.64  n/a     .000
     [RDT= 1.00] out<-    1.0 01:DRAIN4       434.92    3.572 No_date   29:35   21.64  n/a     .000
      [L/S/n=  324./ .100/.043]
      {Vmax=  .480:Dmax= 1.218}
R0005:C00130-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:D4             1.73     .049 No_date   28:35   27.98 .490     .000
      [CN= 88.0: N= 3.00: Tp=  .60]
      [IaREC= 4.00: SMIN= 14.94: SMAX= 99.61: SK= .010]
      [InterEventTime=  12.00]
R0005:C00131-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:Area-B        24.04    2.784 No_date   28:04   40.98 .717     .000
      [XIMP=.62:TIMP=.77]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=1.40:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.40:LGI= 693.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0005:C00132-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:Area-B        24.04    2.784 No_date   28:04   40.98  n/a     .000
                out <=    1.0 01:SWMF-B        24.04     .278 No_date   28:55   40.98  n/a     .000
           overflow <=    1.0 03:SWMBOVF         .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.6277E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00133-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:DRAIN4       434.92    3.572 No_date   29:35   21.64  n/a     .000
                    +     1.0 02:D4             1.73     .049 No_date   28:35   27.98  n/a     .000
                    +     1.0 02:SWMF-B        24.04     .278 No_date   28:55   40.98  n/a     .000
                    +     1.0 02:SWMBOVF         .00     .000 No_date    0:00     .00  n/a     .000
                 SUM=     1.0 01:D4-EX        460.69    3.861 No_date   29:25   22.68  n/a     .000
R0005:C00134-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:D4-EX        460.69    3.861 No_date   29:25   22.68  n/a     .000
     [RDT= 1.00] out<-    1.0 01:DRAIN5       460.69    3.810 No_date   29:44   22.68  n/a     .000
      [L/S/n=  413./ .160/.033]
      {Vmax=  .561:Dmax=  .821}
R0005:C00135-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:D5             1.90     .044 No_date   28:42   25.92 .454     .000
      [CN= 86.0: N= 3.00: Tp=  .69]
      [IaREC= 4.00: SMIN= 17.43: SMAX=116.21: SK= .010]
      [InterEventTime=  12.00]
R0005:C00136-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:O-13SDF        9.74     .290 No_date   28:22   24.64 .431     .000
      [CN= 81.0: N= 3.00: Tp=  .43]
      [IaREC= 4.00: SMIN= 25.21: SMAX=168.09: SK= .010]
      [InterEventTime=  12.00]
R0005:C00137-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:O-13SDF        9.74     .290 No_date   28:22   24.64  n/a     .000
                out <=    1.0 01:SDF            9.74     .032 No_date   32:11   24.64  n/a     .000
           overflow <=    1.0 03:OVFSDF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.1268E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00138-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:DRAIN5       460.69    3.810 No_date   29:44   22.68  n/a     .000
                    +     1.0 02:D5             1.90     .044 No_date   28:42   25.92  n/a     .000
                    +     1.0 02:SDF            9.74     .032 No_date   32:11   24.64  n/a     .000
                 SUM=     1.0 01:PT6MC        472.33    3.863 No_date   29:44   22.73  n/a     .000
R0005:C00139-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:O-15          10.67     .385 No_date   28:13   23.43 .410     .000
      [CN= 82.0: N= 3.00: Tp=  .30]
      [IaREC= 4.00: SMIN= 23.09: SMAX=153.94: SK= .010]
      [InterEventTime=  12.00]
R0005:C00140-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:PT6MC        472.33    3.863 No_date   29:44   22.73  n/a     .000
                    +     1.0 02:O-15          10.67     .385 No_date   28:13   23.43  n/a     .000
                 SUM=     1.0 01:M-C          483.00    3.921 No_date   29:44   22.75  n/a     .000
R0005:C00141-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:M-C          483.00    3.921 No_date   29:44   22.75  n/a     .000
     [RDT= 1.00] out<-    1.0 01:O-14Ch       483.00    3.787 No_date   30:06   22.75  n/a     .000
      [L/S/n=  845./ .100/.033]
      {Vmax=  .748:Dmax= 1.430}
R0005:C00142-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:O-14           5.00     .300 No_date   28:04   23.43 .410     .000
      [CN= 82.0: N= 3.00: Tp=  .13]
      [IaREC= 4.00: SMIN= 23.09: SMAX=153.94: SK= .010]
      [InterEventTime=  12.00]
R0005:C00143-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:O-14Ch       483.00    3.787 No_date   30:06   22.75  n/a     .000
                    +     1.0 02:O-14           5.00     .300 No_date   28:04   23.43  n/a     .000
                 SUM=     1.0 01:OKEEFE       488.00    3.807 No_date   30:06   22.75  n/a     .000
#*****************************************************************************
#    Okeefe Pond
#    - Rating curve obtained assuming 40m3/ha in 24 hours for quality control
#      and a ratio of the catchment area to the West Clarke pond rating curve
#      from the MSS for the next coordinates
#*****************************************************************************
R0005:C00144-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:S-1-D2        18.67     .239 No_date   29:13   21.69 .380     .000
      [CN= 77.0: N= 3.00: Tp= 1.12]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0005:C00145-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:S-1-D3         6.79     .079 No_date   29:25   21.69 .380     .000
      [CN= 77.0: N= 3.00: Tp= 1.28]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0005:C00146-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N_OK       53064.36   67.890 No_date   34:06   18.32  n/a     .000
                    +     1.0 02:OKEEFE       488.00    3.807 No_date   30:06   22.75  n/a     .000
                    +     1.0 02:S-1-D2        18.67     .239 No_date   29:13   21.69  n/a     .000
                    +     1.0 02:S-1-D3         6.79     .079 No_date   29:25   21.69  n/a     .000
                 SUM=     1.0 01:SN_OK      53577.82   69.253 No_date   34:06   18.36  n/a     .000
R0005:C00147-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_OK      53577.82   69.253 No_date   34:06   18.36  n/a     .000
      fname :SN_OK.0005
      remark:Total Flows at Okeefe Drain
#
# Hydrograph from Node Okeefe routed to Node at Foster Drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 6215
#
R0005:C00148-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_OK      53577.82   69.253 No_date   34:06   18.36  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N_FO       53577.82   69.117 No_date   34:07   18.36  n/a     .000
      [L/S/n= 1183./ .076/.035]
      {Vmax= 1.031:Dmax= 2.621}
#*****************************************************************************
#    Catchment FOSTER
#    - To Foster ditch (north of the Jock)
#    - Partially developed (medium density); remaining agricultural
#    - 2020-12-01 JFSA Foster area is 332 as per Foster SWMF Environmental Study Report, CH2MHILL, Aug 2013.
#    - 2020-12-01 decrease Foster drainage area from (373 HA) to (307.98 HA) after increasing Okeefe drainage area to (5
#    - 2021-02-12  update Foster area to 325.44 ha as measured from QGIS
#*****************************************************************************
R0005:C00149-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:FOSTER       325.44   19.055 No_date   28:13   37.71 .660     .000
      [XIMP=.55:TIMP=.55]
      [LOSS= 2 :CN= 74.0]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1473.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 36.67: SMAX=244.49: SK= .010]
#*****************************************************************************
#    Foster Pond
#    - Rating curve obtained assuming 40m3/ha in 24 hours for quality control
#      and a ratio of the catchment area to the West Clarke pond rating curve
#      from the MSS for the next coordinates
#*****************************************************************************
R0005:C00150-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:FOSTER       325.44   19.055 No_date   28:13   37.71  n/a     .000
                out <=    1.0 01:P_FOS        325.44    5.174 No_date   29:08   37.71  n/a     .000
           overflow <=    1.0 03:FO-OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.5004E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00151-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:P_FOS        325.44    5.174 No_date   29:08   37.71  n/a     .000
                    +     1.0 02:FO-OVF          .00     .000 No_date    0:00     .00  n/a     .000
                 SUM=     1.0 01:FOSTER-OUT   325.44    5.174 No_date   29:08   37.71  n/a     .000
#*****************************************************************************
R0005:C00152-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:W_CLAR_BRA    73.29    6.276 No_date   28:06   41.22 .722     .000
      [XIMP=.60:TIMP=.65]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 699.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0005:C00153-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:W_CLAR_BRA    73.29    6.276 No_date   28:06   41.22  n/a     .000
                out <=    1.0 01:MS_P10        73.29    1.101 No_date   28:56   41.22  n/a     .000
           overflow <=    1.0 03:P10-OVF         .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.1093E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00154-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:S-1-FO-D2      4.94     .064 No_date   29:11   21.69 .380     .000
      [CN= 77.0: N= 3.00: Tp= 1.10]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0005:C00155-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:FOSTER-OUT   325.44    5.174 No_date   29:08   37.71  n/a     .000
                    +     1.0 02:S-1-FO-D2      4.94     .064 No_date   29:11   21.69  n/a     .000
                 SUM=     1.0 01:980          330.38    5.238 No_date   29:08   37.47  n/a     .000
R0005:C00156-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:980          330.38    5.238 No_date   29:08   37.47  n/a     .000
      fname :980.0005
      remark:Total Flows at Station 980 on Foster Drain
#
# Hydrograph from Node Foster SWM (Station 980)to Node at station 520
# Channel X-Section obtained from RVCA Hydraulic Model - Station 980
#
R0005:C00157-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:980          330.38    5.238 No_date   29:08   37.47  n/a     .000
     [RDT= 1.00] out<-    1.0 01:980-out      330.38    5.063 No_date   29:14   37.47  n/a     .000
      [L/S/n=  460./ .043/.035]
      {Vmax=  .603:Dmax= 1.271}
R0005:C00158-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:S-1-FO-D1      5.11     .066 No_date   29:11   21.69 .380     .000
      [CN= 77.0: N= 3.00: Tp= 1.10]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0005:C00159-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:980-out      330.38    5.063 No_date   29:14   37.47  n/a     .000
                    +     1.0 02:S-1-FO-D1      5.11     .066 No_date   29:11   21.69  n/a     .000
                 SUM=     1.0 01:520          335.49    5.129 No_date   29:14   37.23  n/a     .000
R0005:C00160-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:520          335.49    5.129 No_date   29:14   37.23  n/a     .000
      fname :520.0005
```

```
      remark:Total Flows at Sation 520 on Foster Drain
# Hydrograph from Node at Station 520 (Foster Drain) to Node at station 6016 (Jock River)
# Channel X-Section obtained from RVCA Hydraulic Model - Station 520
#
R0005:C00161------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:520           335.49    5.129 No_date   29:14   37.23  n/a     .000
     [RDT= 1.00] out<-    1.0 01:520-out       335.49    5.080 No_date   29:32   37.23  n/a     .000
      [L/S/n=  860./ .587/.035]
      {Vmax= 1.320:Dmax=  .607}
R0005:C00162------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:S-1-FO-F-D    14.96     .206 No_date   29:05   21.69 .380     .000
      [CN= 77.0: N= 3.00: Tp= 1.01]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0005:C00163------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-D8         5.27     .654 No_date   28:00   42.00 .735     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .75:LGI= 187.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0005:C00164------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:S-1-A         75.88    1.479 No_date   28:37   21.69 .380     .000
      [CN= 77.0: N= 3.00: Tp=  .62]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0005:C00165------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:W_CLAR_UND    35.65     .462 No_date   29:11   21.69 .380     .000
      [CN= 77.0: N= 3.00: Tp= 1.10]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0005:C00166------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N_FO       53577.82   69.117 No_date   34:07   18.36  n/a     .000
                    +     1.0 02:520-out       335.49    5.080 No_date   29:32   37.23  n/a     .000
                    +     1.0 02:MS_P10         73.29    1.101 No_date   28:56   41.22  n/a     .000
                    +     1.0 02:P10-OVF          .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:W_CLAR_UND    35.65     .462 No_date   29:11   21.69  n/a     .000
                    +     1.0 02:S-1-FO-F-D    14.96     .206 No_date   29:05   21.69  n/a     .000
                    +     1.0 02:S-1-D8         5.27     .654 No_date   28:00   42.00  n/a     .000
                    +     1.0 02:S-1-A         75.88    1.479 No_date   28:37   21.69  n/a     .000
                 SUM=     1.0 01:SN_FO      54118.36   71.824 No_date   33:59   18.52  n/a     .000
R0005:C00167------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_FO      54118.36   71.824 No_date   33:59   18.52  n/a     .000
      fname :SN_FO.0005
      remark:Total Flows at Foster Drain
# Hydrograph from Node Foster routed to Node at Cedarview Road
# Channel X-Section obtained from RVCA Hydraulic Model - Station 6016
#
R0005:C00168------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_FO      54118.36   71.824 No_date   33:59   18.52  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:N_CE       54118.36   71.792 No_date   34:07   18.52  n/a     .000
      [L/S/n=  159./ .082/.035]
      {Vmax= 1.246:Dmax= 3.101}
#******************************************************************************
#    Catchment S-1
#    - To Jock River (north and south of Jock)
#    - Primarily agricultural fields; portion of sand quarry
#******************************************************************************
R0005:C00169------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:S-1-B         55.36    1.342 No_date   28:24   21.69 .380     .000
      [CN= 77.0: N= 3.00: Tp=  .45]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
#    -  JFSA 2021-02-24 change the name from S-1-BCDC to S-1-A and S-1-B. Change their TP values based on the new areas
#    -  JFSA 2021-02-24 "S-1-BCDC-1" and "S-1-BCDC-2" are not existing anymore. "S-1-BCDC-1" is part of "S-1-FO-D2" and
#    -  JFSA 2021-01-19, after adding Greenbank pond, "S-1-BCDC-3" is not existing anymore
R0005:C00170------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:S-1-D1        21.67     .287 No_date   29:09   21.69 .380     .000
      [CN= 77.0: N= 3.00: Tp= 1.07]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0005:C00171------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:S-1-D4         3.28     .042 No_date   29:11   21.69 .380     .000
      [CN= 77.0: N= 3.00: Tp= 1.10]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0005:C00172------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:S-1-D5        12.84     .166 No_date   29:11   21.69 .380     .000
      [CN= 77.0: N= 3.00: Tp= 1.10]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0005:C00173------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:S-1-D6         1.75     .023 No_date   29:11   21.69 .380     .000
      [CN= 77.0: N= 3.00: Tp= 1.10]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0005:C00174------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:S-1-D7         2.03     .026 No_date   29:11   21.69 .380     .000
      [CN= 77.0: N= 3.00: Tp= 1.10]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
#    Catchment W_CLAR
#    - To West Clarke Drain (south of the Jock)
#    - Subdivision with 43% imp. as per Barrhaven South MSS
#    - 2020-11-30 update CLARKE Tributary Drainage Area to  = 121 ha based on P598(04)-11
#    - 2020-11-30 split CLARKE Drainage Area to MAJOR and ALL
#******************************************************************************
R0005:C00175------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:W_CLAR_MJ      1.77     .192 No_date   28:00   37.36 .654     .000
      [XIMP=.46:TIMP=.59]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 109.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
# 5-Year + 12% Capture
R0005:C00176------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:W_CLAR_MJ      1.77     .192 No_date   28:00   37.36  n/a     .000
                out <=    1.0 01:W_CLAR_MJn     1.77     .192 No_date   28:00   37.36  n/a     .000
           overflow <=    1.0 03:W_CLAR_MJj      .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.9116E-04  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00177------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:W_CLAR_ALL   119.40   10.597 No_date   28:05   41.22 .722     .000
      [XIMP=.60:TIMP=.65]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 892.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0005:C00178------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:W_CLAR_ALL   119.40   10.597 No_date   28:05   41.22  n/a     .000
                    +     1.0 02:W_CLAR_MJj      .00     .000 No_date    0:00     .00  n/a     .000
                 SUM=     1.0 01:W_CLAR       119.40   10.597 No_date   28:05   41.22  n/a     .000
R0005:C00179------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:W_CLAR       119.40   10.597 No_date   28:05   41.22  n/a     .000
      fname :W_CLAR.0005
      remark:Total Flows to West Clarke
#******************************************************************************
#    West Clarke Pond 2
#    - Rating curve obtained from Barrhaven South MSS modeling
#    - Tributary Drainage Area to MSS Pond 2 = 241 ha
#******************************************************************************
R0005:C00180------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:W_CLAR       119.40   10.597 No_date   28:05   41.22  n/a     .000
                out <=    1.0 01:MS_P2        119.40    1.795 No_date   28:54   41.22  n/a     .000
           overflow <=    1.0 03:P2-OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.2665E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
#******************************************************************************
R0005:C00181------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N_CE       54118.36   71.792 No_date   34:07   18.52  n/a     .000
                    +     1.0 02:S-1-D4         3.28     .042 No_date   29:11   21.69  n/a     .000
                    +     1.0 02:S-1-D5        12.84     .166 No_date   29:11   21.69  n/a     .000
                    +     1.0 02:MS_P2        119.40    1.795 No_date   28:54   41.22  n/a     .000
                    +     1.0 02:P2-OVF          .00     .000 No_date    0:00     .00  n/a     .000
                 SUM=     1.0 01:SN_CE      54253.88   72.522 No_date   34:07   18.57  n/a     .000
R0005:C00182------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_CE      54253.88   72.522 No_date   34:07   18.57  n/a     .000
      fname :SN_CE.0005
      remark:Total Flows before Station 5737 on Jock River
# Channel X-Section obtained from RVCA Hydraulic Model - Station 5737
# JFSA 2021-02-25 add station 5737 before station 5002. Station 5737 was extracted from the HEC-RAS model T:\PROJ\1474-1
# JFSA 2021-03-02  change the slope to 0.1% instead of 0.0175 to stabilize the model
R0005:C00183------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_CE      54253.88   72.522 No_date   34:07   18.57  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:5737       54253.88   70.229 No_date   36:14   18.57  n/a     .000
      [L/S/n=  270./ .018/.035]
      {Vmax=  .686:Dmax= 4.074}
R0005:C00184------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:5737       54253.88   70.229 No_date   36:14   18.57  n/a     .000
                    +     1.0 02:S-1-D1        21.67     .287 No_date   29:09   21.69  n/a     .000
                    +     1.0 02:S-1-D6         1.75     .023 No_date   29:11   21.69  n/a     .000
                    +     1.0 02:S-1-D7         2.03     .026 No_date   29:11   21.69  n/a     .000
                 SUM=     1.0 01:5002       54279.33   70.280 No_date   36:14   18.57  n/a     .000
R0005:C00185------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:5002       54279.33   70.280 No_date   36:14   18.57  n/a     .000
      fname :5002.0005
      remark:Total Flows before Station 5002 on Jock River
# Hydrograph from Node Cedarview Road routed to Node at West Clarke Drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 5002
# JFSA 2021-02-19 Change the slope from 0.01 % (as per Stantec Report 2007) to 0.0255 % so the model will be more stable
# JFSA 2021-02-19 Change to three ROUTE CHANNEL with length 275 m each instead of one with 825 m length so the model wil
# JFSA 2021-02-26 change the length of 5002 route channel from 825 m to 736 m. That is because of adding station 5737 be
R0005:C00186------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:5002       54279.33   70.280 No_date   36:14   18.57  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N_WCa      54279.33   70.286 No_date   36:12   18.57  n/a     .000
      [L/S/n=  245./ .095/.035]
      {Vmax= 1.070:Dmax= 2.329}
R0005:C00187------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:N_WCa      54279.33   70.286 No_date   36:12   18.57  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N_WCb      54279.33   70.290 No_date   36:11   18.57  n/a     .000
      [L/S/n=  245./ .095/.035]
      {Vmax= 1.070:Dmax= 2.329}
R0005:C00188------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:N_WCb      54279.33   70.290 No_date   36:11   18.57  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N_WC       54279.33   70.433 No_date   37:41   18.57  n/a     .000
      [L/S/n=  245./ .095/.035]
      {Vmax= 1.070:Dmax= 2.329}
#******************************************************************************
# Hydrograph from Node West Clarke routed to Node at Kennedy - Burnett Drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 4534
#
R0005:C00189------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:N_WC       54279.33   70.433 No_date   37:41   18.57  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N_KB       54279.33   70.411 No_date   37:42   18.57  n/a     .000
      [L/S/n= 1020./ .050/.035]
      {Vmax=  .948:Dmax= 2.868}
#******************************************************************************
#    Catchment KEN_BU
#    - To Kennedy-Burnett SWM Facility
#    - Outlets to Fraser-Clarke drain (north of the Jock)
#    - Medium density residential subdivision
#******************************************************************************
#******************************************************************************
#   Existing Kennedy-Burnett SWM Facility
#    - Rating curve obtained from URTKBP
#    - Tributary Drainage Area to Pond = 160 ha
#******************************************************************************
R0005:C00190------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-01A        40.82    2.624 No_date   28:14   20.08 .351     .000
      [XIMP=.10:TIMP=.40]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI= .50:LGI= 522.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0005:C00191------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-01A        40.82    2.624 No_date   28:14   20.08  n/a     .000
     Major System   /     1.0 02:KB-01A-MJ       .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-01A-MN     40.82    2.624 No_date   28:14   20.08  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00192------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-01A-MJ       .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:KB-01A-MN     40.82    2.624 No_date   28:14   20.08  n/a     .000
                 SUM=     1.0 01:KB-01A-S      40.82    2.624 No_date   28:14   20.08  n/a     .000
R0005:C00193------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-01B        31.10    1.779 No_date   28:08   22.42 .393     .000
      [XIMP=.19:TIMP=.38]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .42:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI= .42:LGI= 455.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0005:C00194------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-01B        31.10    1.779 No_date   28:08   22.42  n/a     .000
     Major System   /     1.0 02:KB-01B-MJ       .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-01B-MN     31.10    1.585 No_date   28:03   22.52  n/a     .000
      {MjSysSto=.1530E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00195------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-01B-MJ       .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:KB-01B-MN     31.10    1.585 No_date   28:03   22.52  n/a     .000
                 SUM=     1.0 01:KB-01B-S      31.10    1.585 No_date   28:03   22.52  n/a     .000
R0005:C00196------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-01C        13.78    1.235 No_date   28:05   23.43 .410     .000
      [XIMP=.20:TIMP=.41]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI= .50:LGI= 303.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0005:C00197------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-01C        13.78    1.235 No_date   28:05   23.43  n/a     .000
     Major System   /     1.0 02:KB-01C-MJ       .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-01C-MN     13.78    1.235 No_date   28:05   23.43  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00198------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-01C-MJ       .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:KB-01C-MN     13.78    1.235 No_date   28:05   23.43  n/a     .000
                 SUM=     1.0 01:KB-01C-S      13.78    1.235 No_date   28:05   23.43  n/a     .000
R0005:C00199------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-03         84.78    6.180 No_date   28:10   22.99 .402     .000
      [XIMP=.20:TIMP=.39]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI= .63:LGI= 752.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0005:C00200------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-03         84.78    6.180 No_date   28:10   22.99  n/a     .000
     Major System   /     1.0 02:KB-03-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-03-MN      84.78    5.270 No_date   28:03   23.12  n/a     .000
      {MjSysSto=.5145E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00201------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-03-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:KB-03-MN      84.78    5.270 No_date   28:03   23.12  n/a     .000
                 SUM=     1.0 01:KB-03-S       84.78    5.270 No_date   28:03   23.12  n/a     .000
R0005:C00202------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-04          6.95    1.043 No_date   28:01   49.53 .867     .000
      [XIMP=.85:TIMP=.85]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .94:SLPI= .50:LGI= 215.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0005:C00203------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-04          6.95    1.043 No_date   28:01   49.53  n/a     .000
     Major System   /     1.0 02:KB-04-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-04-MN       6.95     .503 No_date   27:48   49.78  n/a     .000
      {MjSysSto=.3742E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00204------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-04-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:KB-04-MN       6.95     .503 No_date   27:48   49.78  n/a     .000
                 SUM=     1.0 01:KB-04-S        6.95     .503 No_date   27:48   49.78  n/a     .000
R0005:C00205------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-05          5.19     .855 No_date   28:00   52.49 .919     .000
      [XIMP=.93:TIMP=.93]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 186.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0005:C00206------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-06         12.93    2.190 No_date   28:00   50.55 .885     .000
      [XIMP=.87:TIMP=.87]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .94:SLPI=4.75:LGI= 294.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0005:C00207------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-06         12.93    2.190 No_date   28:00   50.55  n/a     .000
     Major System   /     1.0 02:KB-06-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-06-MN      12.93    2.190 No_date   28:00   50.55  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00208------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-06-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:KB-06-MN      12.93    2.190 No_date   28:00   50.55  n/a     .000
                 SUM=     1.0 01:KB-06-S       12.93    2.190 No_date   28:00   50.55  n/a     .000
R0005:C00209------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-11          4.03     .584 No_date   28:00   41.88 .733     .000
      [XIMP=.68:TIMP=.68]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI=2.00:LGI= 164.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0005:C00210------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-11          4.03     .584 No_date   28:00   41.88  n/a     .000
     Major System   /     1.0 02:KB-11-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-11-MN       4.03     .577 No_date   28:00   41.89  n/a     .000
      {MjSysSto=.4277E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00211------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-11-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:KB-11-MN       4.03     .577 No_date   28:00   41.89  n/a     .000
                 SUM=     1.0 01:KB-11-S        4.03     .577 No_date   28:00   41.89  n/a     .000
R0005:C00212------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S1             4.99     .892 No_date   28:00   52.49 .919     .000
      [XIMP=.93:TIMP=.93]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=2.00:LGI= 182.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0005:C00213------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-15          2.15     .321 No_date   28:00   47.49 .831     .000
      [XIMP=.79:TIMP=.79]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .16:SLPI= .30:LGI= 120.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0005:C00214------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-01A-S      40.82    2.624 No_date   28:14   20.08  n/a     .000
                    +     1.0 02:KB-01B-S      31.10    1.585 No_date   28:03   22.52  n/a     .000
                    +     1.0 02:KB-01C-S      13.78    1.235 No_date   28:05   23.43  n/a     .000
                    +     1.0 02:KB-03-S       84.78    5.270 No_date   28:03   23.12  n/a     .000
                    +     1.0 02:KB-04-S        6.95     .503 No_date   27:48   49.78  n/a     .000
                    +     1.0 02:KB-05          5.19     .855 No_date   28:00   52.49  n/a     .000
                    +     1.0 02:KB-06-S       12.93    2.190 No_date   28:00   50.55  n/a     .000
                    +     1.0 02:KB-11-S        4.03     .577 No_date   28:00   41.89  n/a     .000
                    +     1.0 02:KB-15          2.15     .321 No_date   28:00   47.49  n/a     .000
                    +     1.0 02:S1             4.99     .892 No_date   28:00   52.49  n/a     .000
                 SUM=     1.0 01:KB-P1        206.72   14.564 No_date   28:02   27.13  n/a     .000
R0005:C00215------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:KB-P1        206.72   14.564 No_date   28:02   27.13  n/a     .000
                out <=    1.0 01:KB-P1R       206.72   11.746 No_date   28:15   27.13  n/a     .000
           overflow <=    1.0 03:KB-P1ovf        .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.5868E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00216------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-P1R       206.72   11.746 No_date   28:15   27.13  n/a     .000
                    +     1.0 02:KB-P1ovf        .00     .000 No_date    0:00     .00  n/a     .000
                 SUM=     1.0 01:KB-Pond1     206.72   11.746 No_date   28:15   27.13  n/a     .000
R0005:C00217------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:KB-Pond1     206.72   11.746 No_date   28:15   27.13  n/a     .000
      fname :KB-Pond1.0005
      remark:Total Flows at KB first pond
R0005:C00218------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-07         10.86    1.770 No_date   28:00   50.11 .877     .000
      [XIMP=.86:TIMP=.86]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI=2.00:LGI= 269.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0005:C00219------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
```

```
    COMPUTE DUALHYD        1.0 01:KB-07          10.86    1.770 No_date   28:00   50.11  n/a      .000
     Major System   /      1.0 02:KB-07-MJ         .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \      1.0 03:KB-07-MN       10.86    1.770 No_date   28:00   50.11  n/a      .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00220------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:KB-07-MJ         .00     .000 No_date    0:00     .00  n/a      .000
                    +      1.0 02:KB-07-MN       10.86    1.770 No_date   28:00   50.11  n/a      .000
                 SUM=      1.0 01:KB-07-S        10.86    1.770 No_date   28:00   50.11  n/a      .000
R0005:C00221------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD    1.0 01:KB-08           6.61     .900 No_date   28:00   40.32 .706      .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI=2.00:LGI= 210.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0005:C00222------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD        1.0 01:KB-08           6.61     .900 No_date   28:00   40.32  n/a      .000
     Major System   /      1.0 02:KB-08-MJ         .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \      1.0 03:KB-08-MN        6.61     .900 No_date   28:00   40.32  n/a      .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00223------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:KB-08-MJ         .00     .000 No_date    0:00     .00  n/a      .000
                    +      1.0 02:KB-08-MN        6.61     .900 No_date   28:00   40.32  n/a      .000
                 SUM=      1.0 01:KB-08-S         6.61     .900 No_date   28:00   40.32  n/a      .000
R0005:C00224------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD    1.0 01:KB-09           2.60     .448 No_date   28:00   49.44 .865      .000
      [XIMP=.86:TIMP=.86]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=2.00:LGI= 132.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0005:C00225------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD    1.0 01:KB-10_1         2.37     .409 No_date   28:00   49.44 .865      .000
      [XIMP=.86:TIMP=.86]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=2.00:LGI= 126.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0005:C00226------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD    1.0 01:KB-10_2         1.14     .199 No_date   28:00   49.44 .865      .000
      [XIMP=.86:TIMP=.86]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=2.00:LGI=  87.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0005:C00227------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD    1.0 01:KB-12           4.86     .777 No_date   28:00   46.75 .818      .000
      [XIMP=.79:TIMP=.79]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.10:SLPI=2.00:LGI= 180.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0005:C00228------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD        1.0 01:KB-12           4.86     .777 No_date   28:00   46.75  n/a      .000
     Major System   /      1.0 02:KB-12-MJ         .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \      1.0 03:KB-12-MN        4.86     .777 No_date   28:00   46.75  n/a      .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00229------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:KB-12-MJ         .00     .000 No_date    0:00     .00  n/a      .000
                    +      1.0 02:KB-12-MN        4.86     .777 No_date   28:00   46.75  n/a      .000
                 SUM=      1.0 01:KB-12-S         4.86     .777 No_date   28:00   46.75  n/a      .000
R0005:C00230------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD    1.0 01:KB-13          10.19    1.364 No_date   28:00   40.32 .706      .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI=2.00:LGI= 261.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0005:C00231------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD        1.0 01:KB-13          10.19    1.364 No_date   28:00   40.32  n/a      .000
     Major System   /      1.0 02:KB-13-MJ         .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \      1.0 03:KB-13-MN       10.19    1.364 No_date   28:00   40.32  n/a      .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00232------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:KB-13-MJ         .00     .000 No_date    0:00     .00  n/a      .000
                    +      1.0 02:KB-13-MN       10.19    1.364 No_date   28:00   40.32  n/a      .000
                 SUM=      1.0 01:KB-13-S        10.19    1.364 No_date   28:00   40.32  n/a      .000
R0005:C00233------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD    1.0 01:KB-14           5.47     .756 No_date   28:00   40.32 .706      .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI=2.00:LGI= 191.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0005:C00234------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD        1.0 01:KB-14           5.47     .756 No_date   28:00   40.32  n/a      .000
     Major System   /      1.0 02:KB-14-MJ         .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \      1.0 03:KB-14-MN        5.47     .756 No_date   28:00   40.32  n/a      .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00235------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:KB-14-MJ         .00     .000 No_date    0:00     .00  n/a      .000
                    +      1.0 02:KB-14-MN        5.47     .756 No_date   28:00   40.32  n/a      .000
                 SUM=      1.0 01:KB-14-S         5.47     .756 No_date   28:00   40.32  n/a      .000
R0005:C00236------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD    1.0 01:KB-16_2         3.42     .462 No_date   28:01   43.88 .768      .000
      [XIMP=.71:TIMP=.71]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .16:SLPI= .30:LGI= 151.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0005:C00237------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:KB-Pond1      206.72   11.746 No_date   28:15   27.13  n/a      .000
                    +      1.0 02:KB-07-S        10.86    1.770 No_date   28:00   50.11  n/a      .000
                    +      1.0 02:KB-08-S         6.61     .900 No_date   28:00   40.32  n/a      .000
                    +      1.0 02:KB-09           2.60     .448 No_date   28:00   49.44  n/a      .000
                    +      1.0 02:KB-10_1         2.37     .409 No_date   28:00   49.43  n/a      .000
                    +      1.0 02:KB-10_2         1.14     .199 No_date   28:00   49.44  n/a      .000
                    +      1.0 02:KB-12-S         4.86     .777 No_date   28:00   46.75  n/a      .000
                    +      1.0 02:KB-13-S        10.19    1.364 No_date   28:00   40.32  n/a      .000
                    +      1.0 02:KB-14-S         5.47     .756 No_date   28:00   40.32  n/a      .000
                    +      1.0 02:KB-16_2         3.42     .462 No_date   28:01   43.88  n/a      .000
                 SUM=      1.0 01:KB-P2         254.24   16.750 No_date   28:01   30.40  n/a      .000
R0005:C00238------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->     1.0 02:KB-P2         254.24   16.750 No_date   28:01   30.40  n/a      .000
                 out <=    1.0 01:KB-P2R        254.24   13.525 No_date   28:14   30.40  n/a      .000
            overflow <=    1.0 03:KB-P2ovf         .00     .000 No_date    0:00     .00  n/a      .000
     {MxStoUsed=.6552E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00239------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:KB-P2R        254.24   13.525 No_date   28:14   30.40  n/a      .000
                    +      1.0 02:KB-P2ovf         .00     .000 No_date    0:00     .00  n/a      .000
                 SUM=      1.0 01:KB-Pond2      254.24   13.525 No_date   28:14   30.40  n/a      .000
R0005:C00240------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD               1.0 01:KB-Pond2      254.24   13.525 No_date   28:14   30.40  n/a      .000
      fname :KB-Pond2.0005
      remark:Total Flows at KB second pond
R0005:C00241------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD    1.0 01:KB-16_1         2.80     .398 No_date   28:01   45.69 .800      .000
      [XIMP=.75:TIMP=.75]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .16:SLPI= .30:LGI= 137.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0005:C00242------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:KB-Pond2      254.24   13.525 No_date   28:14   30.40  n/a      .000
                    +      1.0 02:KB-16_1         2.80     .398 No_date   28:01   45.69  n/a      .000
                 SUM=      1.0 01:KB-P3         257.04   13.655 No_date   28:13   30.57  n/a      .000
R0005:C00243------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->     1.0 02:KB-P3         257.04   13.655 No_date   28:13   30.57  n/a      .000
                 out <=    1.0 01:KB-P3R         14.18     .051 No_date   17:43   30.57  n/a      .000
            overflow <=    1.0 03:KB-P3ovf      242.86   13.603 No_date   28:13   30.57  n/a      .000
     {MxStoUsed=.1998E-02  m3, TotOvfVol=.7424E+01  m3, N-Ovf=    2, TotDurOvf=   23.hrs}
R0005:C00244------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:KB-P3R         14.18     .051 No_date   17:43   30.57  n/a      .000
                    +      1.0 02:KB-P3ovf      242.86   13.603 No_date   28:13   30.57  n/a      .000
                 SUM=      1.0 01:KB-Pond3      257.04   13.654 No_date   28:13   30.57  n/a      .000
R0005:C00245------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD               1.0 01:KB-Pond3      257.04   13.654 No_date   28:13   30.57  n/a      .000
      fname :KB-Pond3.0005
      remark:Total Flows at KB third pond
#*******************************************************************************
#    EXISTING / PROPOSED Subcatchments (Kennedy-Burnett SWM Facility (118080), SWM Modeling Approach, NOVATECH Report Ju
#    - TO FRASER-CLARKE DRAIN
#*******************************************************************************
R0005:C00246------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD    1.0 01:FC-01           8.03     .865 No_date   28:01   32.39 .567      .000
      [XIMP=.47:TIMP=.47]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 231.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0005:C00247------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD        1.0 01:FC-01           8.03     .865 No_date   28:01   32.39  n/a      .000
     Major System   /      1.0 02:FC-01-MJ         .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \      1.0 03:FC-01-MN        8.03     .756 No_date   27:58   32.40  n/a      .000
      {MjSysSto=.2912E+02, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00248------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:FC-01-MJ         .00     .000 No_date    0:00     .00  n/a      .000
                    +      1.0 02:FC-01-MN        8.03     .756 No_date   27:58   32.40  n/a      .000
                 SUM=      1.0 01:FC-01-S         8.03     .756 No_date   27:58   32.40  n/a      .000
R0005:C00249------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD    1.0 01:FC-02          16.05    2.547 No_date   28:01   52.49 .919      .000
      [XIMP=.93:TIMP=.93]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 327.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0005:C00250------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD        1.0 01:FC-02          16.05    2.547 No_date   28:01   52.49  n/a      .000
     Major System   /      1.0 02:FC-02-MJ         .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \      1.0 03:FC-02-MN       16.05    1.159 No_date   27:47   52.68  n/a      .000
      {MjSysSto=.1011E+04, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00251------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:FC-02-MJ         .00     .000 No_date    0:00     .00  n/a      .000
                    +      1.0 02:FC-02-MN       16.05    1.159 No_date   27:47   52.68  n/a      .000
                 SUM=      1.0 01:FC-02-S        16.05    1.159 No_date   27:47   52.68  n/a      .000
R0005:C00252------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD    1.0 01:FC-03           7.37     .956 No_date   28:01   39.82 .697      .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 222.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0005:C00253------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD        1.0 01:FC-03           7.37     .956 No_date   28:01   39.82  n/a      .000
     Major System   /      1.0 02:FC-03-MJ         .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \      1.0 03:FC-03-MN        7.37     .358 No_date   27:45   39.85  n/a      .000
      {MjSysSto=.4806E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00254------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:FC-03-MJ         .00     .000 No_date    0:00     .00  n/a      .000
                    +      1.0 02:FC-03-MN        7.37     .358 No_date   27:45   39.85  n/a      .000
                 SUM=      1.0 01:FC-03-S         7.37     .358 No_date   27:45   39.85  n/a      .000
R0005:C00255------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD    1.0 01:FC-04          12.87    1.600 No_date   28:01   39.82 .697      .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 293.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0005:C00256------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD        1.0 01:FC-04          12.87    1.600 No_date   28:01   39.82  n/a      .000
     Major System   /      1.0 02:FC-04-MJ         .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \      1.0 03:FC-04-MN       12.87     .741 No_date   27:48   39.85  n/a      .000
      {MjSysSto=.6277E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00257------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:FC-04-MJ         .00     .000 No_date    0:00     .00  n/a      .000
                    +      1.0 02:FC-04-MN       12.87     .741 No_date   27:48   39.85  n/a      .000
                 SUM=      1.0 01:FC-04-S        12.87     .741 No_date   27:48   39.85  n/a      .000
#*******************************************************************************
#    PROPOSED Subcatchments (Kennedy-Burnett SWM Facility (118080), SWM Modeling Approach, NOVATECH Report June, 2020)
#    - TO JOCK RIVER
#*******************************************************************************
R0005:C00258------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD    1.0 01:JR-01           8.24    1.064 No_date   28:01   39.82 .697      .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 234.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0005:C00259------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD        1.0 01:JR-01           8.24    1.064 No_date   28:01   39.82  n/a      .000
     Major System   /      1.0 02:JR-01-MJ         .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \      1.0 03:JR-01-MN        8.24     .563 No_date   28:29   40.05  n/a      .000
      {MjSysSto=.3052E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00260------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:JR-01-MJ         .00     .000 No_date    0:00     .00  n/a      .000
                    +      1.0 02:JR-01-MN        8.24     .563 No_date   27:50   40.05  n/a      .000
                 SUM=      1.0 01:JR-01-S         8.24     .563 No_date   27:50   40.05  n/a      .000
R0005:C00261------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD    1.0 01:JR-02           1.59     .224 No_date   28:00   39.82 .697      .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 103.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0005:C00262------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD        1.0 01:JR-02           1.59     .224 No_date   28:00   39.82  n/a      .000
     Major System   /      1.0 02:JR-02-MJ         .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \      1.0 03:JR-02-MN        1.59     .153 No_date   27:53   40.12  n/a      .000
      {MjSysSto=.2948E+02, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00263------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:JR-02-MJ         .00     .000 No_date    0:00     .00  n/a      .000
                    +      1.0 02:JR-02-MN        1.59     .153 No_date   27:53   40.12  n/a      .000
                 SUM=      1.0 01:JR-02-S         1.59     .153 No_date   27:53   40.12  n/a      .000
#*******************************************************************************
#    Catchment FRASER
#    - To Fraser-Clarke drain (north of the Jock)
#    - Developed land with assumed 43% imp.
#    - 2020-12-17 Change Fraser area to be 35.1 as measured from QGIS
#    - 2020-12-17 All Fraser is undeveloped (Nashyd)
#*******************************************************************************
R0005:C00264------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD      1.0 01:FRASER-DRN     13.65     .345 No_date   28:22   21.69 .380      .000
      [CN= 77.0: N= 3.00: Tp=  .43]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0005:C00265------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD      1.0 01:FRASER-D       21.61     .397 No_date   28:40   21.69 .380      .000
      [CN= 77.0: N= 3.00: Tp=  .67]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0005:C00266------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:KB-Pond3      257.04   13.654 No_date   28:13   30.57  n/a      .000
                    +      1.0 02:S-1-B          55.36    1.342 No_date   28:24   21.69  n/a      .000
                    +      1.0 02:FRASER-DRN     13.65     .345 No_date   28:22   21.69  n/a      .000
                    +      1.0 02:FRASER-D       21.61     .397 No_date   28:40   21.69  n/a      .000
                    +      1.0 02:N_KB        54279.33   70.411 No_date   37:42   18.57  n/a      .000
                    +      1.0 02:FC-01-S         8.03     .756 No_date   27:58   32.40  n/a      .000
                    +      1.0 02:FC-02-S        16.05    1.159 No_date   27:47   52.68  n/a      .000
                    +      1.0 02:FC-03-S         7.37     .358 No_date   27:45   39.85  n/a      .000
                 SUM=      1.0 01:4241        54658.44   70.776 No_date   37:42   18.65  n/a      .000
R0005:C00267------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD               1.0 01:4241        54658.44   70.776 No_date   37:42   18.65  n/a      .000
      fname :4241.0005
      remark:Total Flows at Ken-Burnett Outlet
# Hydrograph from Node Ken-Burnett to station 3633
# Channel X-Section obtained from RVCA Hydraulic Model - Station 4241
#
R0005:C00268------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->     1.0 02:4241        54658.44   70.776 No_date   37:42   18.65  n/a      .000
     [RDT= 1.00] out<-     1.0 01:4241-out    54658.44   70.705 No_date   36:09   18.65  n/a      .000
      [L/S/n=  294./ .109/.035]
      {Vmax= 1.100:Dmax= 1.839}
R0005:C00269------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:4241-out    54658.44   70.705 No_date   36:09   18.65  n/a      .000
                    +      1.0 02:FC-04-S        12.87     .741 No_date   27:48   39.85  n/a      .000
                    +      1.0 02:JR-01-S         8.24     .563 No_date   27:50   40.05  n/a      .000
                    +      1.0 02:JR-02-S         1.59     .153 No_date   27:53   40.12  n/a      .000
                 SUM=      1.0 01:SN_KB       54681.13   70.738 No_date   36:08   18.66  n/a      .000
R0005:C00270------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD               1.0 01:SN_KB       54681.13   70.738 No_date   36:08   18.66  n/a      .000
      fname :SN_KB.0005
      remark:HYD_COMMENT=["Total Flows before Station 3633]
# Hydrograph from Station 3633 to Node Todd
# Channel X-Section obtained from RVCA Hydraulic Model - Station 3633
# JFSA 2021-02-26 change the channel length (at station 3633) from 650m to 608m and change the slope from 0.0498% to 0.2
#
R0005:C00271------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->     1.0 02:SN_KB       54681.13   70.738 No_date   36:08   18.66  n/a      .000
     [RDT= 1.00] out<-     1.0 01:N_TO        54681.13   70.709 No_date   36:13   18.66  n/a      .000
      [L/S/n=  608./ .247/.035]
      {Vmax= 1.453:Dmax= 1.382}
#*******************************************************************************
#    Catchment Greenbank
#    - To Greenbank Drain (south of the Jock)
#    - JFSA 2021-01-18 add Greenbank pond as per JFSA, P598(06)-15, June 2016
#    - JFSA 2021-01-19 update area from 37.479 ha to 36.6 ha based on GIS measurements
#*******************************************************************************
R0005:C00272------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD    1.0 01:Greenbank      36.60    3.925 No_date   28:02   42.59 .745      .000
      [XIMP=.64:TIMP=.68]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 494.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0005:C00273------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->     1.0 02:Greenbank      36.60    3.925 No_date   28:02   42.59  n/a      .000
                 out <=    1.0 01:GreenB_MN      36.60     .811 No_date   28:35   42.58  n/a      .000
            overflow <=    1.0 03:GreenB_MJ        .00     .000 No_date    0:00     .00  n/a      .000
     {MxStoUsed=.7695E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00274------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:N_TO        54681.13   70.709 No_date   36:13   18.66  n/a      .000
                    +      1.0 02:GreenB_MJ        .00     .000 No_date    0:00     .00  n/a      .000
                    +      1.0 02:GreenB_MN      36.60     .811 No_date   28:35   42.58  n/a      .000
                 SUM=      1.0 01:GreenB      54717.73   70.826 No_date   36:13   18.67  n/a      .000
R0005:C00275------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD               1.0 01:GreenB      54717.73   70.826 No_date   36:13   18.67  n/a      .000
      fname :GreenB.0005
      remark:Total Flows at Greenbank Drain
#*******************************************************************************
#    Catchment TODD
#    - To Todd Drain (south of the Jock)
#    - Subdivision with 43% imp. as per Barrhaven South MSS
#    - 2020-11-30 increase imp. based on P598(04)-11
#    - 2020-11-30 update TODD Tributary Drainage Area to  = 146.015 ha based on P598(04)-11
#    - 2020-11-30 split TODD Drainage Area to MAJOR, MINOR, POND and ALL
#*******************************************************************************
#    - JFSA 2021-01-19 add "TODD_MN1" as part of Clarke("W_CLAR_MJ") and remove it from Todd
R0005:C00276------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD    1.0 01:TODD_MN2        2.10     .239 No_date   28:00   38.41 .672      .000
      [XIMP=.53:TIMP=.57]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 118.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0005:C00277------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD    1.0 01:TODD_MN3         .12     .014 No_date   28:00   38.39 .672      .000
      [XIMP=.53:TIMP=.57]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI=  28.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0005:C00278------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD    1.0 01:TODD_MJ        30.23    2.959 No_date   28:02   39.47 .691      .000
      [XIMP=.52:TIMP=.64]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 449.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0005:C00279------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD    1.0 01:TODD_ALL      112.91    9.069 No_date   28:05   38.19 .669      .000
```

```
      [XIMP=.52:TIMP=.57]
      [LOSS= 2 :CN= 77.0]
      [Pervious    area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious  area: IAimp= 1.57:SLPI=1.00:LGI= 868.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0005:C00280-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:TODD_P         3.06     .385 No_date   28:00   41.58 .728     .000
      [XIMP=.63:TIMP=.63]
      [LOSS= 2 :CN= 77.0]
      [Pervious    area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious  area: IAimp= 1.57:SLPI=1.00:LGI= 143.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
# 5-Year + 12% Capture
R0005:C00281-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:TODD_MJ       30.23    2.959 No_date   28:02   39.47  n/a     .000
 *              out <=    1.0 01:TODD_MJn      30.23    2.959 No_date   28:02   39.47  n/a     .000
           overflow <=    1.0 03:TODD_MJj        .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.8948E-04  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
# 5-Year + 12% Capture
R0005:C00282-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:TODD_MN2       2.10     .239 No_date   28:00   38.41  n/a     .000
                out <=    1.0 01:TODD_MN2n      2.10     .238 No_date   28:00   38.41  n/a     .000
           overflow <=    1.0 03:TODD_MN2j       .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.8965E-04  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00283-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:TODD_MN3        .12     .014 No_date   28:00   38.39  n/a     .000
                out <=    1.0 01:TODD_MN3n       .12     .014 No_date   28:00   38.39  n/a     .000
           overflow <=    1.0 03:TODD_MN3j       .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.8651E-04  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00284-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A2            25.50    1.991 No_date   28:03   34.66 .607     .000
      [XIMP=.42:TIMP=.52]
      [LOSS= 2 :CN= 75.0]
      [Pervious    area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious  area: IAimp= 1.57:SLPI=1.00:LGI= 566.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0005:C00285-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A2            25.50    1.991 No_date   28:03   34.66  n/a     .000
     Major System   /     1.0 02:A2-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A2-MN         25.50    1.818 No_date   28:00   34.70  n/a     .000
      {MjSysSto=.5163E+02, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00286-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:TODD_MN2n      2.10     .238 No_date   28:00   38.41  n/a     .000
                    +     1.0 02:TODD_MN3n       .12     .014 No_date   28:00   38.39  n/a     .000
                    +     1.0 02:TODD_MJj        .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:TODD_P         3.06     .385 No_date   28:00   41.58  n/a     .000
                    +     1.0 02:TODD_ALL     112.91    9.069 No_date   28:05   38.19  n/a     .000
                    +     1.0 02:W_CLAR_MJn     1.77     .192 No_date   28:00   37.36  n/a     .000
                 SUM=     1.0 01:TODD         119.95    9.538 No_date   28:04   38.27  n/a     .000
R0005:C00287-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:TODD         119.95    9.538 No_date   28:04   38.27  n/a     .000
      fname :TODD.0005
      remark:Total Flows at Todd Drain
#*****************************************************************************
#    Todd Pond 3
#    - Rating curve obtained from Barrhaven South MSS modeling
#    - stantec 2007, Tributary Drainage Area to MSS Pond 3 = 193 ha
#*****************************************************************************
R0005:C00288-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:TODD         119.95    9.538 No_date   28:04   38.27  n/a     .000
                out <=    1.0 01:MS_P3        119.95    3.765 No_date   28:29   38.27  n/a     .000
           overflow <=    1.0 03:P3-OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.2351E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00289-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:GreenB     54717.73   70.826 No_date   36:13   18.67  n/a     .000
                    +     1.0 02:MS_P3        119.95    3.765 No_date   28:29   38.27  n/a     .000
                    +     1.0 02:P3-OVF          .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:TODD_MN2j       .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:A2-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                 SUM=     1.0 01:SN_TO      54837.69   71.097 No_date   36:12   18.71  n/a     .000
R0005:C00290-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_TO      54837.69   71.097 No_date   36:12   18.71  n/a     .000
      fname :SN_TO.0005
      remark:Total Flows at Todd Drain
#
# Hydrograph from Todd Drain routed to Corrigan Drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 2462
# 2021-02-19 Change the slope from 0.033 % (as per Stantec Report 2007) to 0.05 % so the model will be more stable and g
R0005:C00291-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_TO      54837.69   71.097 No_date   36:12   18.71  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:N_TO       54837.69   70.986 No_date   36:25   18.71  n/a     .000
      [L/S/n=  280./ .050/.045]
      {Vmax=  .830:Dmax= 2.582}
R0005:C00292-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:N_TO       54837.69   70.986 No_date   36:25   18.71  n/a     .000
      fname :N_TO.0005
      remark:Total inflows at Station 2462
#*****************************************************************************
#    Catchment CORRIG
#    - To Corrigan Drain (south of the Jock)
#    - Primarily Developed (medium density)
#    - JFSA JAN 2021, add Corrigan subcatchments as per IBI, July 2008
#*****************************************************************************
R0005:C00293-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:corr1         15.87    1.806 No_date   28:01   41.58 .728     .000
      [XIMP=.63:TIMP=.63]
      [LOSS= 2 :CN= 77.0]
      [Pervious    area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious  area: IAimp= 1.57:SLPI=1.00:LGI= 325.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0005:C00294-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:corr1         15.87    1.806 No_date   28:01   41.58  n/a     .000
     Major System   /     1.0 02:corr1-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:corr1-MN      15.87    1.806 No_date   28:01   41.58  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00295-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:corr2         12.47     .161 No_date   29:11   21.69 .380     .000
      [CN= 77.0: N= 3.00: Tp= 1.10]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0005:C00296-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A1-Corrig     15.75    1.357 No_date   28:02   34.66 .607     .000
      [XIMP=.42:TIMP=.52]
      [LOSS= 2 :CN= 75.0]
      [Pervious    area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious  area: IAimp= 1.57:SLPI=1.00:LGI= 324.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0005:C00297-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A1-Corrig     15.75    1.357 No_date   28:02   34.66  n/a     .000
     Major System   /     1.0 02:A1-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A1-MN         15.75    1.357 No_date   28:02   34.66  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00298-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:B1             2.77     .055 No_date   28:09   13.56 .237     .000
      [CN= 56.0: N= 3.00: Tp=  .23]
      [IaREC= 4.00: SMIN= 79.69: SMAX=531.24: SK= .010]
      [InterEventTime=  12.00]
R0005:C00299-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A4             1.27     .153 No_date   28:00   42.00 .735     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 75.0]
      [Pervious    area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious  area: IAimp= 1.57:SLPI=1.00:LGI= 253.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0005:C00300-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A4             1.27     .153 No_date   28:00   42.00  n/a     .000
     Major System   /     1.0 02:A4-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A4-MN          1.27     .153 No_date   28:00   42.00  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00301-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:A1-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:A1-MN         15.75    1.357 No_date   28:02   34.66  n/a     .000
                    +     1.0 02:corr1-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:corr1-MN      15.87    1.806 No_date   28:01   41.58  n/a     .000
                    +     1.0 02:corr2         12.47     .161 No_date   29:11   21.69  n/a     .000
                    +     1.0 02:B1             2.77     .055 No_date   28:09   13.56  n/a     .000
                    +     1.0 02:A4-MN          1.27     .153 No_date   28:00   42.00  n/a     .000
                 SUM=     1.0 01:MH101         48.13    3.389 No_date   28:01   32.56  n/a     .000
R0005:C00302-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH101         48.13    3.389 No_date   28:01   32.56  n/a     .000
      fname :MH101.0005
      remark:Total Flows at MH101
R0005:C00303-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH101         48.13    3.389 No_date   28:01   32.56  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:101-102       48.13    3.277 No_date   28:03   32.56  n/a     .000
      [L/S/n=  368./ .540/.013]
      {Vmax= 3.010:Dmax= 1.049}
      [Din= 1.05:Dused= 1.28]
R0005:C00304-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:A2-MN         25.50    1.818 No_date   28:00   34.70  n/a     .000
                    +     1.0 02:101-102       48.13    3.277 No_date   28:03   32.56  n/a     .000
                 SUM=     1.0 01:MH102         73.63    5.095 No_date   28:03   33.30  n/a     .000
R0005:C00305-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH102         73.63    5.095 No_date   28:03   33.30  n/a     .000
      fname :MH102.0005
      remark:Total Flows at MH102
R0005:C00306-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A5             1.60     .202 No_date   28:01   44.32 .776     .000
      [XIMP=.71:TIMP=.71]
      [LOSS= 2 :CN= 75.0]
      [Pervious    area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious  area: IAimp= 1.57:SLPI=1.00:LGI= 300.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0005:C00307-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:A4-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:A5             1.60     .202 No_date   28:01   44.32  n/a     .000
                 SUM=     1.0 01:A5T            1.60     .202 No_date   28:01   44.32  n/a     .000
R0005:C00308-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A5T            1.60     .202 No_date   28:01   44.32  n/a     .000
     Major System   /     1.0 02:A5-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A5-MN          1.60     .202 No_date   28:01   44.32  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00309-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH102         73.63    5.095 No_date   28:03   33.30  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:102-103       73.63    4.821 No_date   28:05   33.30  n/a     .000
      [L/S/n=  504./ .280/.013]
      {Vmax= 2.606:Dmax= 1.382}
      [Din= 1.50:Dused= 1.68}
R0005:C00310-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:102-103       73.63    4.821 No_date   28:05   33.30  n/a     .000
                    +     1.0 02:A5-MN          1.60     .202 No_date   28:01   44.32  n/a     .000
                 SUM=     1.0 01:MH103         75.23    4.991 No_date   28:04   33.53  n/a     .000
R0005:C00311-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH103         75.23    4.991 No_date   28:04   33.53  n/a     .000
      fname :MH103.0005
      remark:Total Flows at MH103
R0005:C00312-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH103         75.23    4.991 No_date   28:04   33.53  n/a     .000
     [RDT= 1.00] out<-    1.0 01:103-104       75.23    4.875 No_date   28:06   33.53  n/a     .000
      [L/S/n=  438./ .460/.013]
      {Vmax= 3.219:Dmax= 1.124}
      [Din= 1.65:Dused= 1.65}
R0005:C00313-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A6             1.56     .200 No_date   28:01   44.32 .776     .000
      [XIMP=.71:TIMP=.71]
      [LOSS= 2 :CN= 75.0]
      [Pervious    area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious  area: IAimp= 1.57:SLPI=1.00:LGI= 280.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0005:C00314-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:A5-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:A6             1.56     .200 No_date   28:01   44.32  n/a     .000
                 SUM=     1.0 01:A6T            1.56     .200 No_date   28:01   44.32  n/a     .000
R0005:C00315-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A6T            1.56     .200 No_date   28:01   44.32  n/a     .000
     Major System   /     1.0 02:A6-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A6-MN          1.56     .200 No_date   28:01   44.32  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00316-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:A6-MN          1.56     .200 No_date   28:01   44.32  n/a     .000
                    +     1.0 02:103-104       75.23    4.875 No_date   28:06   33.53  n/a     .000
                    +     1.0 02:TODD_MJn      30.23    2.959 No_date   28:02   39.47  n/a     .000
                 SUM=     1.0 01:MH104        107.02    7.823 No_date   28:04   35.37  n/a     .000
R0005:C00317-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH104        107.02    7.823 No_date   28:04   35.37  n/a     .000
      fname :MH104.0005
      remark:Total Flows at MH104
R0005:C00318-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:B2            12.31    1.023 No_date   28:02   34.82 .610     .000
      [XIMP=.41:TIMP=.54]
      [LOSS= 2 :CN= 75.0]
      [Pervious    area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious  area: IAimp= 1.57:SLPI=1.00:LGI= 417.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0005:C00319-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:B2            12.31    1.023 No_date   28:02   34.82  n/a     .000
     Major System   /     1.0 02:B2-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:B2-MN         12.31    1.023 No_date   28:02   34.82  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00320-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:B2-MN         12.31    1.023 No_date   28:02   34.82  n/a     .000
     [RDT= 1.00] out<-    1.0 01:315-333       12.31     .941 No_date   28:04   34.82  n/a     .000
      [L/S/n=  254./ .100/.013]
      {Vmax= 1.219:Dmax=  .834}
      [Din= 1.20:Dused= 1.20}
R0005:C00321-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:B3             5.59     .477 No_date   28:02   34.82 .610     .000
      [XIMP=.41:TIMP=.54]
      [LOSS= 2 :CN= 75.0]
      [Pervious    area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious  area: IAimp= 1.57:SLPI=1.00:LGI= 345.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0005:C00322-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:B3             5.59     .477 No_date   28:02   34.82  n/a     .000
     Major System   /     1.0 02:B3-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:B3-MN          5.59     .459 No_date   28:00   34.87  n/a     .000
      {MjSysSto=.3219E+01, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00323-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:B3-MN          5.59     .459 No_date   28:00   34.87  n/a     .000
                    +     1.0 02:315-333       12.31     .941 No_date   28:04   34.82  n/a     .000
                 SUM=     1.0 01:MH333         17.90    1.400 No_date   28:04   34.84  n/a     .000
R0005:C00324-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH333         17.90    1.400 No_date   28:04   34.84  n/a     .000
      fname :MH333.0005
      remark:Total Flows at MH333
R0005:C00325-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH333         17.90    1.400 No_date   28:04   34.84  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:333-335       17.90    1.320 No_date   28:06   34.84  n/a     .000
      [L/S/n=  251./ .100/.013]
      {Vmax= 1.282:Dmax= 1.033}
      [Din= 1.20:Dused= 1.26}
R0005:C00326-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:333-335       17.90    1.320 No_date   28:06   34.84  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:335-338       17.90    1.265 No_date   28:06   34.84  n/a     .000
      [L/S/n=  185./ .100/.013]
      {Vmax= 1.264:Dmax= 1.010}
      [Din= 1.20:Dused= 1.23}
R0005:C00327-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:335-338       17.90    1.265 No_date   28:06   34.84  n/a     .000
     [RDT= 1.00] out<-    1.0 01:338-340       17.90    1.183 No_date   28:06   34.84  n/a     .000
      [L/S/n=  233./ .100/.013]
      {Vmax= 1.294:Dmax=  .872}
      [Din= 1.35:Dused= 1.35}
R0005:C00328-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:B4             7.60     .638 No_date   28:02   34.82 .610     .000
      [XIMP=.41:TIMP=.54]
      [LOSS= 2 :CN= 75.0]
      [Pervious    area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious  area: IAimp= 1.57:SLPI=1.00:LGI= 388.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0005:C00329-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:B4             7.60     .638 No_date   28:02   34.82  n/a     .000
     Major System   /     1.0 02:B4-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:B4-MN          7.60     .638 No_date   28:02   34.82  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00330-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:338-340       17.90    1.183 No_date   28:06   34.84  n/a     .000
                    +     1.0 02:B4-MN          7.60     .638 No_date   28:02   34.82  n/a     .000
                 SUM=     1.0 01:MH340         25.50    1.761 No_date   28:05   34.83  n/a     .000
R0005:C00331-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH340         25.50    1.761 No_date   28:05   34.83  n/a     .000
      fname :MH340.0005
      remark:Total Flows at MH340
R0005:C00332-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH340         25.50    1.761 No_date   28:05   34.83  n/a     .000
     [RDT= 1.00] out<-    1.0 01:340-104       25.50    1.698 No_date   28:06   34.83  n/a     .000
      [L/S/n=  240./ .150/.013]
      {Vmax= 1.648:Dmax=  .823}
      [Din= 1.65:Dused= 1.65}
R0005:C00333-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:340-104       25.50    1.698 No_date   28:06   34.83  n/a     .000
                    +     1.0 02:MH104        107.02    7.823 No_date   28:04   35.37  n/a     .000
                 SUM=     1.0 01:MH104T       132.52    9.463 No_date   28:04   35.27  n/a     .000
R0005:C00334-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH104T       132.52    9.463 No_date   28:04   35.27  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:104-105      132.52    8.848 No_date   28:06   35.27  n/a     .000
      [L/S/n=  380./ .100/.013]
      {Vmax= 2.012:Dmax= 1.868}
      {HGTH= 2.20:WDTH= 2.52}
R0005:C00335-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:B5             2.20     .248 No_date   28:00   38.90 .681     .000
      [XIMP=.57:TIMP=.57]
      [LOSS= 2 :CN= 75.0]
      [Pervious    area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious  area: IAimp= 1.57:SLPI=1.00:LGI= 187.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0005:C00336-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:B5             2.20     .248 No_date   28:00   38.90  n/a     .000
     Major System   /     1.0 02:B5-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:B5-MN          2.20     .248 No_date   28:00   38.90  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00337-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A8              .96     .130 No_date   28:00   44.32 .776     .000
      [XIMP=.71:TIMP=.71]
      [LOSS= 2 :CN= 75.0]
      [Pervious    area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious  area: IAimp= 1.57:SLPI=1.00:LGI= 186.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0005:C00338-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:A6-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:A8              .96     .130 No_date   28:00   44.32  n/a     .000
                 SUM=     1.0 01:A8T             .96     .130 No_date   28:00   44.32  n/a     .000
R0005:C00339-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A8T             .96     .130 No_date   28:00   44.32  n/a     .000
     Major System   /     1.0 02:A8-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A8-MN           .96     .130 No_date   28:00   44.32  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00340-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:104-105      132.52    8.848 No_date   28:06   35.27  n/a     .000
                    +     1.0 02:B5-MN          2.20     .248 No_date   28:00   38.90  n/a     .000
                    +     1.0 02:A8-MN           .96     .130 No_date   28:00   44.32  n/a     .000
                    +     1.0 02:TODD_MN3j       .00     .000 No_date    0:00     .00  n/a     .000
                 SUM=     1.0 01:MH105        135.68    9.064 No_date   28:05   35.39  n/a     .000
R0005:C00341-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH105        135.68    9.064 No_date   28:05   35.39  n/a     .000
      fname :MH105.0005
      remark:Total Flows at MH105
R0005:C00342-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
 *  DIVERT HYD      ->    1.0 01:A8-MJ           .00     .000 No_date    0:00     .00  n/a     .000
           diverted <=    1.0 02:A8-MJ-JR        .00     .000 No_date    0:00     .00  n/a     .000
           diverted <=    1.0 03:A8-MJ-B6        .00     .000 No_date    0:00     .00  n/a     .000
```

```
R0005:C00343------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    DIVERT HYD      ->    1.0 01:MH105         135.68    9.064 No_date   28:05   35.39  n/a      .000
           diverted <=    1.0 02:MH105-JR       25.07    6.058 No_date   28:05   35.39  n/a      .000
           diverted <=    1.0 03:MH105-B6      110.61    3.006 No_date   28:05   35.39  n/a      .000
R0005:C00344------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:B7              7.19     .661 No_date   28:01   34.82 .610      .000
      [XIMP=.41:TIMP=.54]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 211.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0005:C00345------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:B4-MJ            .00     .000 No_date    0:00     .00  n/a      .000
                   +      1.0 02:B7              7.19     .661 No_date   28:01   34.82  n/a      .000
                SUM=      1.0 01:B7-B4MJ         7.19     .661 No_date   28:01   34.82  n/a      .000
R0005:C00346------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:B7-B4MJ         7.19     .661 No_date   28:01   34.82  n/a      .000
     Major System   /     1.0 02:B7R-MJ           .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:B7R-MN          7.19     .629 No_date   27:59   34.89  n/a      .000
      {MjSysSto=.5005E+01, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00347------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:B7R-MN          7.19     .629 No_date   27:59   34.89  n/a      .000
     [RDT= 1.00] out<-    1.0 01:360-106A        7.19     .615 No_date   28:05   34.89  n/a      .000
      [L/S/n=  167./ .100/.013]
      {Vmax= 1.089:Dmax=  .665}
      [Din= 1.05:Dused= 1.05}
R0005:C00348------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:B6              3.29     .315 No_date   28:00   34.82 .610      .000
      [XIMP=.41:TIMP=.54]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 148.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0005:C00349------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:B6              3.29     .315 No_date   28:00   34.82  n/a      .000
     Major System   /     1.0 02:B6-MJ            .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:B6-MN           3.29     .064 No_date   27:39   34.87  n/a      .000
      {MjSysSto=.2841E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00350------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:EX-LAND        32.50    2.843 No_date   28:02   35.73 .626      .000
      [XIMP=.50:TIMP=.50]
      [LOSS= 2 :CN= 74.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 465.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 36.67: SMAX=244.49: SK= .010]
R0005:C00351------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:EX-LAND        32.50    2.843 No_date   28:02   35.73  n/a      .000
     Major System   /     1.0 02:EX-LAND-MJ       .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:EX-LAND-MN     32.50    2.275 No_date   27:57   35.73  n/a      .000
      {MjSysSto=.2310E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00352------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:B7R-MJ           .00     .000 No_date    0:00     .00  n/a      .000
                   +      1.0 02:EX-LAND-MJ       .00     .000 No_date    0:00     .00  n/a      .000
                   +      1.0 02:B5-MJ            .00     .000 No_date    0:00     .00  n/a      .000
                   +      1.0 02:B6-MJ            .00     .000 No_date    0:00     .00  n/a      .000
                   +      1.0 02:B6-MN           3.29     .064 No_date   27:39   34.87  n/a      .000
                   +      1.0 02:A8-MJ-B6         .00     .000 No_date    0:00     .00  n/a      .000
                SUM=      1.0 01:B6-B7ExMJ       3.29     .064 No_date   27:39   34.87  n/a      .000
R0005:C00353------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:B6-B7ExMJ       3.29     .064 No_date   27:39   34.87  n/a      .000
     Major System   /     1.0 02:B6R-MJ           .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:B6R-MN          3.29     .064 No_date   27:39   34.87  n/a      .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00354------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH105-B6      110.61    3.006 No_date   28:05   35.39  n/a      .000
     [RDT= 1.00] out<-    1.0 01:105-106A      110.61    3.005 No_date   28:08   35.39  n/a      .000
      [L/S/n=  208./ .100/.013]
      {Vmax= 1.597:Dmax= 1.248}
      [Din= 1.80:Dused= 1.80}
R0005:C00355------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:360-106A        7.19     .615 No_date   28:05   34.89  n/a      .000
                   +      1.0 02:105-106A      110.61    3.005 No_date   28:08   35.39  n/a      .000
                   +      1.0 02:B6R-MN          3.29     .064 No_date   27:39   34.87  n/a      .000
                   +      1.0 02:B6R-MJ           .00     .000 No_date    0:00     .00  n/a      .000
                SUM=      1.0 01:MH106A        121.09    3.682 No_date   28:05   35.35  n/a      .000
R0005:C00356------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH106A        121.09    3.682 No_date   28:05   35.35  n/a      .000
      fname :MH106A.0005
      remark:Total Flows at MH106A
R0005:C00357------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH106A        121.09    3.682 No_date   28:05   35.35  n/a      .000
 *   [RDT= 1.00] out<-    1.0 01:106A-106      121.09    3.651 No_date   28:05   35.35  n/a      .000
      [L/S/n=  190./ .100/.013]
      {Vmax= 1.633:Dmax= 1.484}
      [Din= 1.80:Dused= 1.81}
R0005:C00358------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A9              2.44     .316 No_date   28:00   44.32 .776      .000
      [XIMP=.71:TIMP=.71]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 262.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0005:C00359------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A9              2.44     .316 No_date   28:00   44.32  n/a      .000
     Major System   /     1.0 02:A9-MJ            .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:A9-MN           2.44     .316 No_date   28:00   44.32  n/a      .000
R0005:C00360------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:106A-106      121.09    3.651 No_date   28:05   35.35  n/a      .000
                   +      1.0 02:A9-MN           2.44     .316 No_date   28:00   44.32  n/a      .000
                SUM=      1.0 01:MH106         123.53    3.896 No_date   28:03   35.52  n/a      .000
R0005:C00361------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH106         123.53    3.896 No_date   28:03   35.52  n/a      .000
      fname :MH106.0005
      remark:Total Flows at MH106
R0005:C00362------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH106         123.53    3.896 No_date   28:03   35.52  n/a      .000
 *   [RDT= 1.00] out<-    1.0 01:106-107       123.53    3.814 No_date   28:07   35.52  n/a      .000
      [L/S/n=  123./ .100/.013]
      {Vmax= 1.656:Dmax= 1.516}
      [Din= 1.80:Dused= 1.85}
R0005:C00363------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A10             4.14     .345 No_date   28:01   32.29 .565      .000
      [XIMP=.35:TIMP=.47]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 183.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0005:C00364------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A10             4.14     .345 No_date   28:01   32.29  n/a      .000
     Major System   /     1.0 02:A10-MJ           .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:A10-MN          4.14     .310 No_date   27:58   32.34  n/a      .000
      {MjSysSto=.7677E+01, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00365------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A11            10.61    1.053 No_date   28:02   38.79 .679      .000
      [XIMP=.53:TIMP=.62]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 379.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0005:C00366------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A11            10.61    1.053 No_date   28:02   38.79  n/a      .000
     Major System   /     1.0 02:A11-MJ           .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:A11-MN         10.61     .993 No_date   28:00   38.82  n/a      .000
      {MjSysSto=.1280E+02, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00367------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:106-107       123.53    3.814 No_date   28:07   35.52  n/a      .000
                   +      1.0 02:A10-MN          4.14     .310 No_date   27:58   32.34  n/a      .000
                   +      1.0 02:A11-MN         10.61     .993 No_date   28:00   38.82  n/a      .000
                SUM=      1.0 01:MH107         138.28    5.112 No_date   28:06   35.68  n/a      .000
R0005:C00368------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH107         138.28    5.112 No_date   28:06   35.68  n/a      .000
      fname :MH107.0005
      remark:Total Flows at MH107
R0005:C00369------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH107         138.28    5.112 No_date   28:06   35.68  n/a      .000
 *   [RDT= 1.00] out<-    1.0 01:107-119       138.28    5.061 No_date   28:07   35.68  n/a      .000
      [L/S/n=  114./ .120/.013]
      {Vmax= 1.898:Dmax= 1.622}
      [Din= 1.80:Dused= 1.98}
R0005:C00370------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:107-119       138.28    5.061 No_date   28:07   35.68  n/a      .000
 *   [RDT= 1.00] out<-    1.0 01:119-108       138.28    5.009 No_date   28:07   35.68  n/a      .000
      [L/S/n=   66./ .120/.013]
      {Vmax= 1.893:Dmax= 1.616}
      [Din= 1.80:Dused= 1.97}
R0005:C00371------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A12            12.29    1.145 No_date   28:00   34.82 .610      .000
      [XIMP=.41:TIMP=.54]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 183.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0005:C00372------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A12            12.29    1.145 No_date   28:00   34.82  n/a      .000
     Major System   /     1.0 02:A12-MJ           .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:A12-MN         12.29    1.029 No_date   27:57   34.93  n/a      .000
      {MjSysSto=.2567E+02, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00373------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A13             2.59     .312 No_date   28:01   44.32 .776      .000
      [XIMP=.71:TIMP=.71]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 379.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0005:C00374------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A13             2.59     .312 No_date   28:01   44.32  n/a      .000
     Major System   /     1.0 02:A13-MJ           .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:A13-MN          2.59     .312 No_date   28:01   44.32  n/a      .000
R0005:C00375------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:Pond-Block      2.94     .261 No_date   28:00   32.90 .576      .000
      [XIMP=.41:TIMP=.41]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 183.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0005:C00376------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:119-108       138.28    5.009 No_date   28:07   35.68  n/a      .000
                   +      1.0 02:A13-MN          2.59     .312 No_date   28:01   44.32  n/a      .000
                   +      1.0 02:A12-MN         12.29    1.029 No_date   27:57   34.93  n/a      .000
                SUM=      1.0 01:MH108         153.16    6.257 No_date   28:01   35.77  n/a      .000
R0005:C00377------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH108         153.16    6.257 No_date   28:01   35.77  n/a      .000
      fname :MH108.0005
      remark:Total Flows at MH108
R0005:C00378------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH108         153.16    6.257 No_date   28:01   35.77  n/a      .000
 *   [RDT= 1.00] out<-    1.0 01:108-116       153.16    6.250 No_date   28:02   35.77  n/a      .000
      [L/S/n=   77./ .130/.013]
      {Vmax= 2.057:Dmax= 1.724}
      [Din= 1.80:Dused= 2.10}
R0005:C00379------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:108-116       153.16    6.250 No_date   28:02   35.77  n/a      .000
 *   [RDT= 1.00] out<-    1.0 01:116-corrig    153.16    6.248 No_date   28:07   35.77  n/a      .000
      [L/S/n=   80./ .130/.013]
      {Vmax= 2.057:Dmax= 1.723}
      [Din= 1.80:Dused= 2.10}
R0005:C00380------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:116-corrig    153.16    6.248 No_date   28:07   35.77  n/a      .000
                   +      1.0 02:Pond-Block      2.94     .261 No_date   28:00   32.90  n/a      .000
                SUM=      1.0 01:Corrigan      156.10    6.442 No_date   28:02   35.71  n/a      .000
R0005:C00381------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:Corrigan      156.10    6.442 No_date   28:02   35.71  n/a      .000
      fname :Corrigan.0005
      remark:HYD_COMMENT=["Total Flows at Corrigan Pond]
R0005:C00382------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:Corrigan      156.10    6.442 No_date   28:02   35.71  n/a      .000
                out <=    1.0 01:Co-P          156.10    5.462 No_date   28:10   35.71  n/a      .000
           overflow <=    1.0 03:Co-P-OVF         .00     .000 No_date    0:00     .00  n/a      .000
     {MxStoUsed=.9809E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00383------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:Co-P-OVF         .00     .000 No_date    0:00     .00  n/a      .000
                   +      1.0 02:Co-P          156.10    5.462 No_date   28:10   35.71  n/a      .000
                   +      1.0 02:N_TO        54837.69   70.986 No_date   36:25   18.71  n/a      .000
                   +      1.0 02:MH105-JR       25.07    6.058 No_date   28:05   35.39  n/a      .000
                   +      1.0 02:A8-MJ-JR         .00     .000 No_date    0:00     .00  n/a      .000
                   +      1.0 02:A9-MJ            .00     .000 No_date    0:00     .00  n/a      .000
                   +      1.0 02:A10-MJ           .00     .000 No_date    0:00     .00  n/a      .000
                   +      1.0 02:A11-MJ           .00     .000 No_date    0:00     .00  n/a      .000
                   +      1.0 02:A12-MJ           .00     .000 No_date    0:00     .00  n/a      .000
                   +      1.0 02:A13-MJ           .00     .000 No_date    0:00     .00  n/a      .000
                SUM=      1.0 01:corrig      55018.86   71.381 No_date   36:24   18.77  n/a      .000
R0005:C00384------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:corrig      55018.86   71.381 No_date   36:24   18.77  n/a      .000
      fname :corrig.0005
      remark:Total Flows at Corrigan Pond
#****************************************************************************
#    Corrigan Pond 1
#    - Rating curve obtained from Barrhaven South MSS modeling
#    - Tributary Drainage Area to MSS Pond 1 = 145 ha
#****************************************************************************
#
# Hydrograph from Corrigan Drain routed to Jockvale Road
# Channel X-Section obtained from RVCA Hydraulic Model - Station 2462
#
R0005:C00385------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:corrig      55018.86   71.381 No_date   36:24   18.77  n/a      .000
     [RDT= 1.00] out<-    1.0 01:N_MI        55018.86   71.374 No_date   36:27   18.77  n/a      .000
      [L/S/n=  580./ .445/.045]
      {Vmax= 1.653:Dmax= 1.484}
#****************************************************************************
#    Catchment MILLS
#    - To SWM Facility north of the Jock
#    - Primarily residental development
#****************************************************************************
R0005:C00386------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:MILLS         175.99    9.992 No_date   28:07   30.98 .542      .000
      [XIMP=.38:TIMP=.38]
      [LOSS= 2 :CN= 74.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI=1118.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 36.67: SMAX=244.49: SK= .010]
#****************************************************************************
#    Chapman Mills SWM Pond
#    - Rating curve obtained from CCL hydraulic modeling
#****************************************************************************
R0005:C00387------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:MILLS         175.99    9.992 No_date   28:07   30.97  n/a      .000
                out <=    1.0 01:MILL_P        175.99    3.368 No_date   28:44   30.97  n/a      .000
           overflow <=    1.0 03:MIL-OV           .00     .000 No_date    0:00     .00  n/a      .000
     {MxStoUsed=.1941E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00388------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N_MI        55018.86   71.374 No_date   36:27   18.77  n/a      .000
                   +      1.0 02:MIL-OV           .00     .000 No_date    0:00     .00  n/a      .000
                   +      1.0 02:MILL_P        175.99    3.368 No_date   28:44   30.97  n/a      .000
                SUM=      1.0 01:SN_MI       55194.85   71.782 No_date   36:25   18.81  n/a      .000
R0005:C00389------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_MI       55194.85   71.782 No_date   36:25   18.81  n/a      .000
      fname :SN_MI.0005
      remark:Total Flows at Jockvale Road
#
# Hydrograph from Jockvale Road routed to Heart's Desire
# Channel X-Section obtained from RVCA Hydraulic Model - Station 689
#
R0005:C00390------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_MI       55194.85   71.782 No_date   36:25   18.81  n/a      .000
     [RDT= 1.00] out<-    1.0 01:N_DE        55194.85   71.600 No_date   36:43   18.81  n/a      .000
      [L/S/n= 1962./ .223/.045]
      {Vmax= 1.311:Dmax= 1.906}
#****************************************************************************
#    Catchment DESIRE
#    - To Jock River (north of the Jock)
#    - Rural-estate subdivision (Heart's Desire Community)
#****************************************************************************
R0005:C00391------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:DESIRE         23.78    1.359 No_date   28:03   27.22 .477      .000
      [XIMP=.25:TIMP=.25]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 400.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
#****************************************************************************
#    Catchment JOCKVA
#    - To Jockvale SWM Facility
#    - Residential development & golf course
#    - JFSA 2021-01-11 update JOCKVA after updating CORRIG as per IBI GROUP, July 2008.
#      JOCKVA area became 225.13 ha instead of 257.63 ha. JOCKVA separated into two areas JOCKVA and EX-LAND 32.5 ha as
#****************************************************************************
R0005:C00392------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:JOCKVA        225.13   14.675 No_date   28:09   35.73 .626      .000
      [XIMP=.50:TIMP=.50]
      [LOSS= 2 :CN= 74.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI=1311.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 36.67: SMAX=244.49: SK= .010]
R0005:C00393------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:EX-LAND-MN     32.50    2.275 No_date   27:57   35.73  n/a      .000
                   +      1.0 02:JOCKVA        225.13   14.675 No_date   28:09   35.73  n/a      .000
                   +      1.0 02:B2-MJ            .00     .000 No_date    0:00     .00  n/a      .000
                   +      1.0 02:B3-MJ            .00     .000 No_date    0:00     .00  n/a      .000
                SUM=      1.0 01:JOCKVA-TO     257.63   16.950 No_date   28:09   35.73  n/a      .000
R0005:C00394------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:JOCKVA-TO     257.63   16.950 No_date   28:09   35.73  n/a      .000
      fname :JOCKVA-TO.0005
      remark:Total Flows at KB first pond
#****************************************************************************
#    Jockvale SWM Facility
#    - Rating curve obtained from Jockvale Servicing Study (CCL 1999)
#****************************************************************************
R0005:C00395------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:JOCKVA-TO     257.63   16.950 No_date   28:09   35.73  n/a      .000
                out <=    1.0 01:JOCK_P        257.63    4.781 No_date   28:48   35.73  n/a      .000
           overflow <=    1.0 03:JO-OVF           .00     .000 No_date    0:00     .00  n/a      .000
     {MxStoUsed=.4115E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00396------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N_DE        55194.85   71.600 No_date   36:43   18.81  n/a      .000
                   +      1.0 02:DESIRE         23.78    1.359 No_date   28:03   27.22  n/a      .000
                   +      1.0 02:JO-OVF           .00     .000 No_date    0:00     .00  n/a      .000
                   +      1.0 02:JOCK_P        257.63    4.781 No_date   28:48   35.73  n/a      .000
                SUM=      1.0 01:SN_DE       55476.26   72.224 No_date   36:39   18.89  n/a      .000
R0005:C00397------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_DE       55476.26   72.224 No_date   36:39   18.89  n/a      .000
      fname :SN_DE.0005
      remark:Total Flows at Heart's Desire
#
# Hydrograph from Heart's Desire routed to Rideau River
# Channel X-Section obtained from RVCA Hydraulic Model - Station 0
#
R0005:C00398------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_DE       55476.26   72.224 No_date   36:39   18.89  n/a      .000
     [RDT= 1.00] out<-    1.0 01:N1          55476.26   72.207 No_date   36:46   18.89  n/a      .000
      [L/S/n=  563./ .967/.045]
      {Vmax= 1.684:Dmax=  .961}
#****************************************************************************
#    Catchment S-2
#    - To Jock River (north and south)
#    - Undeveloped floodplain and river
#****************************************************************************
R0005:C00399------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:S-2           102.94    2.262 No_date   28:20   19.00 .333      .000
      [CN= 72.0: N= 3.00: Tp=  .40]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
```

```
R0005:C00400------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              1.0 02:N1         55476.26   72.207 No_date   36:46   18.89  n/a     .000
                   +     1.0 02:S-2          102.94    2.262 No_date   28:20   19.00  n/a     .000
                SUM=     1.0 01:SN_N1      55579.20   72.356 No_date   36:46   18.89  n/a     .000
R0005:C00401------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD             1.0 01:SN_N1      55579.20   72.356 No_date   36:46   18.89  n/a     .000
      fname :SN_N1.0005
      remark:Total Flows at Rideau River
###############################################################################
  ** END OF RUN :    9
****************************************************************************************************
 RUN#:COMMAND#
R0010:C00001----------------------------------------------------------------------------------------
     START
      [TZERO =    .00 hrs on        0]
      [METOUT=   2    (1=imperial, 2=metric output)]
      [NSTORM=   1 ]
      [NRUN  = 0010 ]
#*****************************************************************************
#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
#*****************************************************************************
#  Project Name: [Jock River]    Project Number: [1474-16]
#  Date        : 04-03-2021
#  Modeller    : [M.M.]
#  Company     : JFSAinc.
#  License #   :  2549237
#*****************************************************************************
# CALIBRATION OF SUMMER MODEL PARAMETERS
# USING CONTINUOUS SIMULATIONS
# Rainfall data from JFSA raingauge installed at site + other gauges by the City
# Use data collected from May 1st to July 14, 2003
# 2020-11-30 change TMJSTO in COMPUTE DUALHYD (TMJSTO = 0.1 instead of 0.0001)
# 2020-12-01 correct pond curve values
# 2020-12-01 change W_CLAR_BRAZ XIMP to 0.55, SLPI=[0.5](%) (impervious slope), and LGI up to 700m
# 2021-02-19 Change the slope for ROUTE CHANNEL Station 2462 (NHYDout=["N_TO"] ,NHYDin=["SN_TO"]) from 0.033 % (as per S
# 2021-02-19 Change the slope for ROUTE CHANNEL Station 5002 (NHYDout=["N_WC"] ,NHYDin=["SN_CE"]) from 0.01 % (as per St
# ------------------------------------------------------------------------------
R0010:C00002----------------------------------------------------------------------------------------
     READ STORM
      Filename = storm.001
      Comment  = Pluie SCS de 24 hres 1:10 ans pour Ottawa CDA
      [SDT=10.00:SDUR=  24.00:PTOT=  64.69]
R0010:C00003----------------------------------------------------------------------------------------
     MODIFY STORM
      [RFACT=  1.00:TSHIFT= 960.00 min]
      [SDT=10.00:SDUR=  40.00:PTOT=  64.69]
R0010:C00004----------------------------------------------------------------------------------------
     DEFAULT VALUES
      Filename = T:\PROJ\1474-16\Design\20201026-QuantityControlAnalysis\SWMHYMO\SMR-Model\updated3\CitiGate.DEF
      ICASEdv  = 1 (read and print data)
      FileTitle= File comment: [Based onvarious calibration exercises in Onta
                 THE FOLLOWING PARAMETERS ARE USED IN THE DESIGN STANDHYD COM
      Horton's infiltration equation parameters:
      [Fo= 76.20 mm/hr] [Fc=13.20 mm/hr] [DCAY= 4.14 /hr] [F=  .00 mm]
      Parameters for PERVIOUS surfaces in STANDHYD:
      [IAper=   4.67 mm] [LGP=50.00 m] [MNP= .250]
      Parameters for IMPERVIOUS surfaces in STANDHYD:
      [IAimp=   1.57 mm] [CLI= 1.50]   [MNI= .013]
      Parameters used in NASHYD:
      [Ia=   4.67 mm] [N= 3.00]
      Average monthly Pan Evaporation data in    (mm)
   JAN   FEB   MAR   APR   MAY   JUN   JUL   AUG   SEP   OCT   NOV   DEC
   .00   .00   .00   .00   .00   .00   .00   .00   .00   .00   .00   .00
      Average monthly Potential Evapotranspiration in    (mm)
   JAN   FEB   MAR   APR   MAY   JUN   JUL   AUG   SEP   OCT   NOV   DEC
   .00   .00   .00   .00   .00   .00   .00   .00   .00   .00   .00   .00
R0010:C00005----------------------------------------------------------------------------------------
     COMPUTE API
      [APIini= 50.00: APIkdy= .8500: APIkdt= .9989]
      {APImax= 97.81: APIavg= 62.29: APImin= 44.87}
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.32
R0010:C00006------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:JR_HW       3680.00   11.879 No_date   36:59   20.23 .313     .000
      [CN= 64.0: N= 3.00: Tp= 7.13]
      [IaREC= 4.00: SMIN= 57.05: SMAX=380.32: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.32
R0010:C00007------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_13        971.00    4.365 No_date   32:35   18.83 .291     .000
      [CN= 61.0: N= 3.00: Tp= 3.76]
      [IaREC= 4.00: SMIN= 64.50: SMAX=430.01: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.80
R0010:C00008------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:JR_GWM      3074.00    5.829 No_date   39:59   16.22 .251     .000
      [CN= 55.0: N= 3.00: Tp=11.33]
      [IaREC= 4.00: SMIN= 83.24: SMAX=554.96: SK= .010]
      [InterEventTime=  12.00]
R0010:C00009------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:JR_ASH      1781.00   10.839 No_date   32:42   24.81 .383     .000
      [CN= 72.0: N= 3.00: Tp= 3.91]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
R0010:C00010------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_11        500.00    5.639 No_date   29:22   21.19 .328     .000
      [CN= 66.0: N= 3.00: Tp= 1.24]
      [IaREC= 4.00: SMIN= 52.62: SMAX=350.79: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.80
R0010:C00011------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:NN_CK       1917.00    7.897 No_date   34:28   21.19 .328     .000
      [CN= 66.0: N= 3.00: Tp= 5.29]
      [IaREC= 4.00: SMIN= 52.62: SMAX=350.79: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.52
R0010:C00012------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_10       5666.00   21.255 No_date   37:58   24.81 .383     .000
      [CN= 72.0: N= 3.00: Tp= 8.00]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.75
R0010:C00013------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:KG_CK       8376.00   20.398 No_date   39:59   21.19 .328     .000
      [CN= 66.0: N= 3.00: Tp=11.66]
      [IaREC= 4.00: SMIN= 52.62: SMAX=350.79: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.68
R0010:C00014------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_9        1132.00    8.921 No_date   30:54   23.73 .367     .000
      [CN= 70.0: N= 3.00: Tp= 2.51]
      [IaREC= 4.00: SMIN= 43.07: SMAX=287.10: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.82
R0010:C00015------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:NC_CK       4464.00   10.128 No_date   39:59   19.29 .298     .000
      [CN= 62.0: N= 3.00: Tp=11.32]
      [IaREC= 4.00: SMIN= 61.90: SMAX=412.66: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.80
R0010:C00016------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_8         131.00    1.689 No_date   28:57   19.76 .305     .000
      [CN= 63.0: N= 3.00: Tp=  .90]
      [IaREC= 4.00: SMIN= 59.42: SMAX=396.11: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.65
R0010:C00017------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:HB_DR       3854.00   11.811 No_date   38:37   21.19 .328     .000
      [CN= 66.0: N= 3.00: Tp= 8.42]
      [IaREC= 4.00: SMIN= 52.62: SMAX=350.79: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.82
R0010:C00018------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_7        3197.00    8.899 No_date   36:26   17.07 .264     .000
      [CN= 57.0: N= 3.00: Tp= 6.65]
      [IaREC= 4.00: SMIN= 76.32: SMAX=508.81: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.75
R0010:C00019------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_6         165.00     .818 No_date   33:04   21.69 .335     .000
      [CN= 67.0: N= 3.00: Tp= 4.18]
      [IaREC= 4.00: SMIN= 50.55: SMAX=336.97: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.67
R0010:C00020------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:VG_DR       1332.00    6.069 No_date   35:17   24.81 .383     .000
      [CN= 72.0: N= 3.00: Tp= 5.95]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
R0010:C00021------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_5         224.00    5.246 No_date   28:45   28.24 .437     .000
      [CN= 77.0: N= 3.00: Tp=  .75]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.20
R0010:C00022------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:FL_CK       4945.00   28.945 No_date   33:21   25.91 .401     .000
      [CN= 74.0: N= 3.00: Tp= 4.45]
      [IaREC= 4.00: SMIN= 36.67: SMAX=244.49: SK= .010]
      [InterEventTime=  12.00]
R0010:C00023------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_5A2        20.00     .614 No_date   28:36   31.37 .485     .000
      [CN= 81.0: N= 3.00: Tp=  .62]
      [IaREC= 4.00: SMIN= 25.21: SMAX=168.09: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.61
R0010:C00024------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_5A1      1412.00    5.817 No_date   37:54   27.06 .418     .000
      [CN= 75.0: N= 3.00: Tp= 8.00]
      [IaREC= 4.00: SMIN= 33.81: SMAX=225.43: SK= .010]
      [InterEventTime=  12.00]
R0010:C00025------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_4         585.00    8.458 No_date   29:57   31.37 .485     .000
      [CN= 81.0: N= 3.00: Tp= 1.75]
      [IaREC= 4.00: SMIN= 25.21: SMAX=168.09: SK= .010]
      [InterEventTime=  12.00]
R0010:C00026------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:LM_CK       1021.00   11.195 No_date   30:48   30.72 .475     .000
      [CN= 80.0: N= 3.00: Tp= 2.46]
      [IaREC= 4.00: SMIN= 26.32: SMAX=175.50: SK= .010]
      [InterEventTime=  12.00]
R0010:C00027------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_2         177.00    4.146 No_date   28:45   28.24 .437     .000
      [CN= 77.0: N= 3.00: Tp=  .75]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0010:C00028------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SM_DR       1122.00   10.275 No_date   31:46   31.37 .485     .000
      [CN= 81.0: N= 3.00: Tp= 3.25]
      [IaREC= 4.00: SMIN= 25.21: SMAX=168.09: SK= .010]
      [InterEventTime=  12.00]
R0010:C00029------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:MO_DR       2737.00   22.669 No_date   31:32   27.64 .427     .000
      [CN= 76.0: N= 3.00: Tp= 3.03]
      [IaREC= 4.00: SMIN= 32.46: SMAX=216.39: SK= .010]
      [InterEventTime=  12.00]
#
# Routing hydrographs
#
# Starting with the addition of Jock River Headwater and Subwatershed 13
#
R0010:C00030------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              1.0 02:JR_HW       3680.00   11.879 No_date   36:59   20.23  n/a     .000
                   +     1.0 02:SW_13        971.00    4.365 No_date   32:35   18.83  n/a     .000
                SUM=     1.0 01:S_N13       4651.00   15.130 No_date   35:28   19.94  n/a     .000
#
# Sum of hydrographs from Node 13 routed to Node 13A
# (Approximated cross-section - see cross-section 258)
# Use n=0.04 for summer conditions and n=0.025 for spring conditions
#
R0010:C00031------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N13       4651.00   15.130 No_date   35:28   19.94  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N13A        4651.00   12.097 No_date   39:41   19.94  n/a     .000
      [L/S/n= 9074./ .022/.040]
      {Vmax=  .508:Dmax= 3.307}
#
# Addition of Subwatershed Jock River at Goodwood Marsh to Node 13A
#
R0010:C00032------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              1.0 02:N13A        4651.00   12.097 No_date   39:41   19.94  n/a     .000
                   +     1.0 02:JR_GWM      3074.00    5.829 No_date   39:59   16.22  n/a     .000
                SUM=     1.0 01:SN13A       7725.00   17.918 No_date   39:59   18.46  n/a     .000
#
# Insertion of a reservoir to simulate the effects of the Goodwood Marsh
#
R0010:C00033------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:SN13A       7725.00   17.918 No_date   39:59   18.46  n/a     .000
                out <=    1.0 01:RES_GM      7725.00    3.524 No_date   58:32   18.46  n/a     .000
     {MxStoUsed=.8503E+02  m3}
#
R0010:C00034------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:RES_GM      7725.00    3.524 No_date   58:32   18.46  n/a     .000
      fname :H_RESGM
      remark:Outflow from Res GM
# Output of Reservoir Goodwood Marsh routed from Node 13A to Node 12
# (Approximated cross-section - see cross-section 258)
# Use n=0.04 for summer conditions and n=0.025 for spring conditions
R0010:C00035------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:RES_GM      7725.00    3.524 No_date   58:32   18.46  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N12         7725.00    3.519 No_date   61:53   18.46  n/a     .000
      [L/S/n= 5926./ .076/.040]
      {Vmax=  .546:Dmax= 1.499}
#
# Addition of Subwatershed Jock River at Ashton to Node 12
#
R0010:C00036------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              1.0 02:N12         7725.00    3.519 No_date   61:53   18.46  n/a     .000
                   +     1.0 02:JR_ASH      1781.00   10.839 No_date   32:42   24.81  n/a     .000
                SUM=     1.0 01:S_N12       9506.00   12.834 No_date   32:45   19.65  n/a     .000
R0010:C00037------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD             1.0 01:S_N12       9506.00   12.834 No_date   32:45   19.65  n/a     .000
      fname :H_SN12
      remark:flow at S_N12 near Ashton
#
# Sum of hydrographs from Node 12 routed to Node 11
# (Approximated cross-section - see cross-section 258)
# Use n=0.04 for summer conditions and n=0.025 for spring conditions
#
# Sum of hydrographs from Node 12 routed to Node 11 with Dummy section 248
#
R0010:C00038------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N12       9506.00   12.834 No_date   32:45   19.65  n/a     .000
     [RDT= 1.00] out<-    1.0 01:Dum11       9506.00   12.710 No_date   33:02   19.65  n/a     .000
      [L/S/n=  972./ .054/.040]
      {Vmax=  .680:Dmax= 2.598}
#
# Addition of Subwatershed 11 and No Name Creek to Node 11
#
R0010:C00039------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              1.0 02:Dum11       9506.00   12.710 No_date   33:02   19.65  n/a     .000
                   +     1.0 02:SW_11        500.00    5.639 No_date   29:22   21.19  n/a     .000
                   +     1.0 02:NN_CK       1917.00    7.897 No_date   34:28   21.19  n/a     .000
                SUM=     1.0 01:S_N11      11923.00   21.813 No_date   33:05   19.96  n/a     .000
#
# Sum of hydrographs from Node 11 routed to Node 10
# Section 1
#
R0010:C00040------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N11      11923.00   21.813 No_date   33:05   19.96  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N10        11923.00   14.761 No_date   39:58   19.96  n/a     .000
      [L/S/n=14028./ .157/.040]
      {Vmax=  .452:Dmax= 1.212}
#
# Addition of Subwatershed 10 to Node 10
#
R0010:C00041------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              1.0 02:N10        11923.00   14.761 No_date   39:58   19.96  n/a     .000
                   +     1.0 02:SW_10       5666.00   21.255 No_date   37:58   24.81  n/a     .000
                SUM=     1.0 01:S_N10      17589.00   35.808 No_date   38:35   21.52  n/a     .000
R0010:C00042------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD             1.0 01:S_N10      17589.00   35.808 No_date   38:35   21.52  n/a     .000
      fname :H_SN10
      remark:flow at S_N10: N10 + SW_10
# Addition of Kings Creek to S_N10
#
R0010:C00043------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              1.0 02:S_N10      17589.00   35.808 No_date   38:35   21.52  n/a     .000
                   +     1.0 02:KG_CK       8376.00   20.398 No_date   39:59   21.19  n/a     .000
                SUM=     1.0 01:S_N10A     25965.00   55.807 No_date   39:58   21.41  n/a     .000
#
# Sum of hydrographs from Node 10 routed to Node 9
# Section 2
#
R0010:C00044------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N10A     25965.00   55.807 No_date   39:58   21.41  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N9         25965.00   54.076 No_date   39:59   21.41  n/a     .000
      [L/S/n= 3982./ .075/.040]
      {Vmax=  .682:Dmax= 1.695}
#
# Addition of Subwatershed 9 and Nichols Creek to Node 9
#
R0010:C00045------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              1.0 02:N9         25965.00   54.076 No_date   39:59   21.41  n/a     .000
                   +     1.0 02:SW_9        1132.00    8.921 No_date   30:54   23.73  n/a     .000
                   +     1.0 02:NC_CK       4464.00   10.128 No_date   39:59   19.29  n/a     .000
                SUM=     1.0 01:S_N9       31561.00   66.284 No_date   39:59   21.20  n/a     .000
#
# Sum of hydrographs from Node 9 routed to Node 8
# Section 3
#
R0010:C00046------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N9       31561.00   66.284 No_date   39:59   21.20  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N8         31561.00   61.483 No_date   39:57   21.20  n/a     .000
      [L/S/n= 2269./ .088/.045]
      {Vmax=  .363:Dmax= 1.619}
#
# Addition of Subwatershed 8 and Hobb's Drain to Node 8
#
R0010:C00047------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
```

```
     ADD HYD                 1.0 02:N8        31561.00   61.483 No_date   39:57   21.20  n/a     .000
                        +    1.0 02:SW_8        131.00    1.689 No_date   28:57   19.76  n/a     .000
                        +    1.0 02:HB_DR      3854.00   11.811 No_date   38:37   21.19  n/a     .000
                     SUM=    1.0 01:S_N8      35546.00   73.344 No_date   39:57   21.19  n/a     .000
#
# Sum of hydrographs from Node 8 routed to Node 7
# Section 4
#
R0010:C00048------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE CHANNEL   ->    1.0 02:S_N8      35546.00   73.344 No_date   39:57   21.19  n/a     .000
      [RDT= 1.00] out<-    1.0 01:N7        35546.00   61.416 No_date   45:01   21.19  n/a     .000
       [L/S/n= 3750./ .053/.070]
       {Vmax=  .218:Dmax= 1.987}
#
# Addition of Subwatershed 7 to Node 7
#
R0010:C00049------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD                 1.0 02:N7        35546.00   61.416 No_date   45:01   21.19  n/a     .000
                        +    1.0 02:SW_7       3197.00    8.899 No_date   36:26   17.07  n/a     .000
                     SUM=    1.0 01:S_N7      38743.00   65.819 No_date   44:06   20.85  n/a     .000
R0010:C00050------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     SAVE HYD                1.0 01:S_N7      38743.00   65.819 No_date   44:06   20.85  n/a     .000
       fname :H_SN7
       remark:flow at S_N7: N7 + SW_7
# Insertion of a reservoir to simulate the effects of the Richmond Fen.
# Storage area and volumes were estimated from available topo maps.
# Release rate from fen was assumed to be controlled by the downstream
# river cross-section for summer conditions.  It is was assumed that for up to
# 0.75 m of water, the main channel of the river provided the storage.  Above
# this depth, the wetland starts to signigicantly store water.
#
R0010:C00051------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE RESERVOIR ->    1.0 02:S_N7      38743.00   65.819 No_date   44:06   20.85  n/a     .000
                 out <=    1.0 01:RES_RF    38743.00   31.796 No_date   60:32   20.85  n/a     .000
      {MxStoUsed=.2597E+03  m3}
R0010:C00052------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     SAVE HYD                1.0 01:RES_RF    38743.00   31.796 No_date   60:32   20.85  n/a     .000
       fname :H_ResRF
       remark:outflow of Richmond Fen
#
# Sum of hydrographs from Node 7 routed to Node 6
# Section 5
#
R0010:C00053------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE CHANNEL   ->    1.0 02:RES_RF    38743.00   31.796 No_date   60:32   20.85  n/a     .000
      [RDT= 1.00] out<-    1.0 01:N6        38743.00   31.737 No_date   62:00   20.85  n/a     .000
       [L/S/n= 3056./ .082/.025]
       {Vmax=  .477:Dmax=  .960}
#
# Addition of Subwatershed 6 and Van Gaal Drain to Node 6
#
R0010:C00054------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD                 1.0 02:N6        38743.00   31.737 No_date   62:00   20.85  n/a     .000
                        +    1.0 02:SW_6        165.00     .818 No_date   33:04   21.69  n/a     .000
                        +    1.0 02:VG_DR      1332.00    6.069 No_date   35:17   24.81  n/a     .000
                     SUM=    1.0 01:S_N6      40240.01   31.737 No_date   62:00   20.99  n/a     .000
#
# Sum of hydrographs from Node 6 routed to Node 5
# Section 6
#
R0010:C00055------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE CHANNEL   ->    1.0 02:S_N6      40240.01   31.737 No_date   62:00   20.99  n/a     .000
      [RDT= 1.00] out<-    1.0 01:N5        40240.01   31.713 No_date   62:48   20.99  n/a     .000
       [L/S/n= 1852./ .054/.035]
       {Vmax=  .412:Dmax= 1.069}
#
# Addition of Subwatershed 5 and Flowing Creek to Node 5
#
R0010:C00056------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD                 1.0 02:N5        40240.01   31.713 No_date   62:48   20.99  n/a     .000
                        +    1.0 02:SW_5        224.00    5.246 No_date   28:45   28.24  n/a     .000
                        +    1.0 02:FL_CK      4945.00   28.945 No_date   33:21   25.91  n/a     .000
                     SUM=    1.0 01:S_N5      45409.01   51.448 No_date   34:54   21.56  n/a     .000
#
# Sum of hydrographs from Node 5 routed to Node 5A
# Section 7
#
R0010:C00057------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE CHANNEL   ->    1.0 02:S_N5      45409.01   51.448 No_date   34:54   21.56  n/a     .000
      [RDT= 1.00] out<-    1.0 01:N5A       45409.01   51.312 No_date   35:12   21.56  n/a     .000
       [L/S/n=  556./ .090/.040]
       {Vmax=  .485:Dmax= 1.131}
#
# Addition of Subwatershed 5A1 and Subwatershed 5A2 to Node 5A
#
R0010:C00058------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD                 1.0 02:N5A       45409.01   51.312 No_date   35:12   21.56  n/a     .000
                        +    1.0 02:SW_5A2       20.00     .614 No_date   28:36   31.37  n/a     .000
                        +    1.0 02:SW_5A1     1412.00    5.817 No_date   37:54   27.06  n/a     .000
                     SUM=    1.0 01:S_N5A     46841.01   56.788 No_date   35:22   21.73  n/a     .000
#
# Sum of hydrographs from Node 5A routed to Node 4
# Section 8
#
R0010:C00059------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE CHANNEL   ->    1.0 02:S_N5A     46841.01   56.788 No_date   35:22   21.73  n/a     .000
      [RDT= 1.00] out<-    1.0 01:N4        46841.01   54.543 No_date   36:56   21.73  n/a     .000
       [L/S/n= 4630./ .043/.035]
       {Vmax=  .793:Dmax= 3.295}
#
# Addition of Subwatershed 4 and Leamy Creek to Node 4
#
R0010:C00060------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD                 1.0 02:N4        46841.01   54.543 No_date   36:56   21.73  n/a     .000
                        +    1.0 02:SW_4        585.00    8.458 No_date   29:57   31.37  n/a     .000
                        +    1.0 02:LM_CK      1021.00   11.195 No_date   30:48   30.72  n/a     .000
                     SUM=    1.0 01:S_N4      48447.00   59.934 No_date   36:12   22.03  n/a     .000
R0010:C00061------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     SAVE HYD                1.0 01:S_N4      48447.00   59.934 No_date   36:12   22.03  n/a     .000
       fname :S_N4.0010
       remark:flow at S_N4
#
# Sum of hydrographs from Node 4 routed to Node 2
# Section 9
#
R0010:C00062------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE CHANNEL   ->    1.0 02:S_N4      48447.00   59.934 No_date   36:12   22.03  n/a     .000
      [RDT= 1.00] out<-    1.0 01:N2        48447.00   59.699 No_date   36:35   22.03  n/a     .000
       [L/S/n= 1667./ .060/.040]
       {Vmax=  .824:Dmax= 3.325}
#
# Addition of Subwatershed 2 with Monohan Drain and Smith Drain to Node 2
#
R0010:C00063------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD                 1.0 02:N2        48447.00   59.699 No_date   36:35   22.03  n/a     .000
                        +    1.0 02:SW_2        177.00    4.146 No_date   28:45   28.24  n/a     .000
                        +    1.0 02:SM_DR      1122.00   10.275 No_date   31:46   31.37  n/a     .000
                        +    1.0 02:MO_DR      2737.00   22.669 No_date   31:32   27.64  n/a     .000
                     SUM=    1.0 01:S_N2      52483.00   83.235 No_date   33:15   22.55  n/a     .000
R0010:C00064------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     SAVE HYD                1.0 01:S_N2      52483.00   83.235 No_date   33:15   22.55  n/a     .000
       fname :H_SN2
       remark:flow at S_N2 Jock River Gauge at Moodie Dr.
#
# Sum of hydrographs from Node 2 routed to Node 1
# Section 10
#
#******************************************************************************
#
# Hydrograph from Node 2 routed to Node 416
# Channel X-Section obtained from RVCA Hydraulic Model - Station 9025
#
R0010:C00065------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE CHANNEL   ->    1.0 02:S_N2      52483.00   83.235 No_date   33:15   22.55  n/a     .000
      [RDT= 1.00] out<-    1.0 01:N_416     52483.00   81.216 No_date   34:18   22.55  n/a     .000
       [L/S/n= 2327./ .050/.055]
       {Vmax=  .705:Dmax= 2.943}
#******************************************************************************
#    Catchment SW-1a
#    - Portion of RVCA catchment SW_1 outside of Reach 1 subwatershed
#    - Undeveloped agricultural land
#******************************************************************************
R0010:C00066------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS NASHYD     1.0 01:SW_1a       536.42    3.888 No_date   31:17   23.57 .364     .000
       [CN= 72.0: N= 3.00: Tp= 2.79]
       [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
       [InterEventTime=  12.00]
R0010:C00067------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS NASHYD     1.0 01:S-1-Okeefe    44.93     .778 No_date   29:07   26.85 .415     .000
       [CN= 77.0: N= 3.00: Tp= 1.05]
       [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
       [InterEventTime=  12.00]
R0010:C00068------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD                 1.0 02:N_416     52483.00   81.216 No_date   34:18   22.55  n/a     .000
                        +    1.0 02:SW_1a       536.42    3.888 No_date   31:17   23.57  n/a     .000
                        +    1.0 02:S-1-Okeefe    44.93     .778 No_date   29:07   26.85  n/a     .000
                     SUM=    1.0 01:SN_416    53064.36   84.151 No_date   33:41   22.56  n/a     .000
R0010:C00069------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     SAVE HYD                1.0 01:SN_416    53064.36   84.151 No_date   33:41   22.56  n/a     .000
       fname :SN_416.0010
       remark:Total Flows at Highway 416
#
# Hydrograph from Node 416 routed to Node at Okeefe drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 7245
#
R0010:C00070------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE CHANNEL   ->    1.0 02:SN_416    53064.36   84.151 No_date   33:41   22.56  n/a     .000
      [RDT= 1.00] out<-    1.0 01:N_OK      53064.36   84.059 No_date   34:06   22.56  n/a     .000
       [L/S/n=  497./ .302/.055]
       {Vmax= 1.450:Dmax= 2.495}
#******************************************************************************
#    Catchment OKEEFE
#    - To O'Keefe drain (north of the Jock)
#    - Developed with assumed 43% imp.
#    - 2020-12-01 add Okeefe model (Area 513.02 HA) instead of current Okeefe (Area 513.02 HA)
#    - 2020-11-20 Okeefe detailed model was added as per the NOVATECH SWMHYMO model (Citi-Gate 2014).
#******************************************************************************
R0010:C00071------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS NASHYD     1.0 01:O-1           63.72     .684 No_date   28:58   17.24 .266     .000
       [CN= 61.0: N= 3.00: Tp=  .90]
       [IaREC= 4.00: SMIN= 64.50: SMAX=430.01: SK= .010]
       [InterEventTime=  12.00]
R0010:C00072------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE CHANNEL   ->    1.0 02:O-1           63.72     .684 No_date   28:58   17.24  n/a     .000
      [RDT= 1.00] out<-    1.0 01:O-1R          63.72     .637 No_date   29:17   17.24  n/a     .000
       [L/S/n=  960./ .630/.043]
       {Vmax=  .755:Dmax=  .334}
R0010:C00073------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS NASHYD     1.0 01:O-2           28.61     .242 No_date   29:13   16.01 .248     .000
       [CN= 57.0: N= 3.00: Tp= 1.10]
       [IaREC= 4.00: SMIN= 76.32: SMAX=508.81: SK= .010]
       [InterEventTime=  12.00]
R0010:C00074------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS NASHYD     1.0 01:O-4           46.94     .303 No_date   29:00   12.15 .188     .000
       [CN= 49.0: N= 3.00: Tp=  .90]
       [IaREC= 4.00: SMIN=104.59: SMAX=697.25: SK= .010]
       [InterEventTime=  12.00]
R0010:C00075------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD                 1.0 02:O-1R          63.72     .637 No_date   29:17   17.24  n/a     .000
                        +    1.0 02:O-2           28.61     .242 No_date   29:13   16.01  n/a     .000
                        +    1.0 02:O-4           46.94     .303 No_date   29:00   12.15  n/a     .000
                     SUM=    1.0 01:OKF-N        139.27    1.172 No_date   29:12   15.27  n/a     .000
R0010:C00076------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE CHANNEL   ->    1.0 02:OKF-N        139.27    1.172 No_date   29:12   15.27  n/a     .000
      [RDT= 1.00] out<-    1.0 01:OKF-NR       139.27    1.170 No_date   29:16   15.27  n/a     .000
       [L/S/n=  210./ .810/.043]
       {Vmax=  .916:Dmax=  .609}
R0010:C00077------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS NASHYD     1.0 01:O-6           16.46     .101 No_date   28:45   10.60 .164     .000
       [CN= 43.0: N= 3.00: Tp=  .70]
       [IaREC= 4.00: SMIN=134.47: SMAX=896.47: SK= .010]
       [InterEventTime=  12.00]
R0010:C00078------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:O-3           39.67     .767 No_date   28:24   19.36 .299     .000
       [XIMP=.15:TIMP=.30]
       [LOSS= 2 :CN= 50.0]
       [Pervious     area: IAper= 4.67:SLPP= .32:LGP= 440.:MNP=.035:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .32:LGI=1880.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 99.77: SMAX=665.12: SK= .010]
R0010:C00079------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:O-5           60.63    1.881 No_date   28:10   22.00 .340     .000
       [XIMP=.13:TIMP=.26]
       [LOSS= 2 :CN= 61.0]
       [Pervious     area: IAper= 4.67:SLPP=1.38:LGP= 550.:MNP=.035:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI=1.38:LGI=1450.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 64.50: SMAX=430.01: SK= .010]
R0010:C00080------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD                 1.0 02:OKF-NR       139.27    1.170 No_date   29:16   15.27  n/a     .000
                        +    1.0 02:O-3           39.67     .767 No_date   28:24   19.36  n/a     .000
                        +    1.0 02:O-5           60.63    1.881 No_date   28:10   22.00  n/a     .000
                        +    1.0 02:O-6           16.46     .101 No_date   28:45   10.60  n/a     .000
                     SUM=    1.0 01:PT1          256.03    3.008 No_date   28:23   17.20  n/a     .000
R0010:C00081------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS NASHYD     1.0 01:O-7            5.28     .056 No_date   28:37   14.05 .217     .000
       [CN= 54.0: N= 3.00: Tp=  .60]
       [IaREC= 4.00: SMIN= 87.01: SMAX=580.07: SK= .010]
       [InterEventTime=  12.00]
R0010:C00082------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD                 1.0 02:PT1          256.03    3.008 No_date   28:23   17.20  n/a     .000
                        +    1.0 02:O-7            5.28     .056 No_date   28:37   14.05  n/a     .000
                     SUM=    1.0 01:FF           261.31    3.058 No_date   28:23   17.14  n/a     .000
R0010:C00083------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE CHANNEL   ->    1.0 02:FF           261.31    3.058 No_date   28:23   17.14  n/a     .000
      [RDT= 1.00] out<-    1.0 01:DRAIN1       261.31    2.972 No_date   28:31   17.14  n/a     .000
       [L/S/n=  302./1.000/.043]
       {Vmax=  .783:Dmax=  .667}
R0010:C00084------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS NASHYD     1.0 01:D1             1.17     .058 No_date   28:12   29.30 .453     .000
       [CN= 84.0: N= 3.00: Tp=  .28]
       [IaREC= 4.00: SMIN= 21.09: SMAX=140.62: SK= .010]
       [InterEventTime=  12.00]
R0010:C00085------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:A1             2.50     .391 No_date   28:01   50.29 .777     .000
       [XIMP=.68:TIMP=.85]
       [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
       [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 224.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00086------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE RESERVOIR ->    1.0 02:A1             2.50     .391 No_date   28:01   50.29  n/a     .000
                 out <=    1.0 01:A1-STR         2.50     .098 No_date   28:24   50.29  n/a     .000
            overflow <=    1.0 03:A1-OVF          .00     .000 No_date    0:00     .00  n/a     .000
      {MxStoUsed=.5829E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00087------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:ST-2            .59     .075 No_date   28:00   38.69 .598     .000
       [XIMP=.46:TIMP=.57]
       [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
       [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 109.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00088------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE RESERVOIR ->    1.0 02:ST-2            .59     .075 No_date   28:00   38.69  n/a     .000
                 out <=    1.0 01:ST2STR          .59     .052 No_date   28:05   38.69  n/a     .000
            overflow <=    1.0 03:ST2OVF          .00     .000 No_date    0:00     .00  n/a     .000
      {MxStoUsed=.1835E-02  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00089------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS NASHYD     1.0 01:O-8           60.55     .857 No_date   29:04   22.40 .346     .000
       [CN= 69.0: N= 3.00: Tp= 1.00]
       [IaREC= 4.00: SMIN= 44.82: SMAX=298.82: SK= .010]
       [InterEventTime=  12.00]
R0010:C00090------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE PIPE      ->    1.0 02:O-8           60.55     .857 No_date   29:04   22.40  n/a     .000
      [RDT= 1.00] out<-    1.0 01:O8PIPE        60.55     .852 No_date   29:08   22.40  n/a     .000
       [L/S/n=  335./ .100/.013]
       {Vmax= 1.080:Dmax=  .441}
       {HGTH= 1.20:WDTH= 1.80}
R0010:C00091------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD                 1.0 02:DRAIN1       261.31    2.972 No_date   28:31   17.14  n/a     .000
                        +    1.0 02:D1             1.17     .058 No_date   28:12   29.30  n/a     .000
                        +    1.0 02:A1-STR         2.50     .098 No_date   28:24   50.29  n/a     .000
                        +    1.0 02:A1-OVF          .00     .000 No_date    0:00     .00  n/a     .000
                        +    1.0 02:ST2STR          .59     .052 No_date   28:05   38.69  n/a     .000
                        +    1.0 02:ST2OVF          .00     .000 No_date    0:00     .00  n/a     .000
                        +    1.0 02:O8PIPE        60.55     .852 No_date   29:08   22.40  n/a     .000
                     SUM=    1.0 01:ST2-IN       326.12    3.771 No_date   28:40   18.45  n/a     .000
R0010:C00092------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:A7             3.51     .538 No_date   28:01   50.29 .777     .000
       [XIMP=.68:TIMP=.85]
       [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
       [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 265.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00093------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE RESERVOIR ->    1.0 02:A7             3.51     .538 No_date   28:01   50.29  n/a     .000
                 out <=    1.0 01:A7-STR         3.51     .139 No_date   28:25   50.29  n/a     .000
            overflow <=    1.0 03:A7-OVF          .00     .000 No_date    0:00     .00  n/a     .000
      {MxStoUsed=.8167E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00094------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:ST-3            .71     .089 No_date   28:00   38.69 .598     .000
       [XIMP=.46:TIMP=.57]
       [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
       [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 119.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00095------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE RESERVOIR ->    1.0 02:ST-3            .71     .089 No_date   28:00   38.69  n/a     .000
                 out <=    1.0 01:ST3STR          .71     .063 No_date   28:05   38.69  n/a     .000
            overflow <=    1.0 03:ST3OVF          .00     .000 No_date    0:00     .00  n/a     .000
      {MxStoUsed=.1988E-02  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00096------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD                 1.0 02:ST2-IN       326.12    3.771 No_date   28:40   18.45  n/a     .000
                        +    1.0 02:A7-STR         3.51     .139 No_date   28:25   50.29  n/a     .000
                        +    1.0 02:A7-OVF          .00     .000 No_date    0:00     .00  n/a     .000
                        +    1.0 02:ST3STR          .71     .063 No_date   28:05   38.69  n/a     .000
                        +    1.0 02:ST3OVF          .00     .000 No_date    0:00     .00  n/a     .000
                     SUM=    1.0 01:PT2ST3       330.34    3.914 No_date   28:39   18.83  n/a     .000
R0010:C00097------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE CHANNEL   ->    1.0 02:PT2ST3       330.34    3.914 No_date   28:39   18.83  n/a     .000
      [RDT= 1.00] out<-    1.0 01:DRAIN2       330.34    3.640 No_date   29:01   18.83  n/a     .000
       [L/S/n=  592./ .230/.043]
       {Vmax=  .582:Dmax= 1.002}
R0010:C00098------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS NASHYD     1.0 01:D2             2.28     .046 No_date   29:04   29.30 .453     .000
       [CN= 84.0: N= 3.00: Tp=  .99]
       [IaREC= 4.00: SMIN= 21.09: SMAX=140.62: SK= .010]
       [InterEventTime=  12.00]
R0010:C00099------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:A17           12.04    1.618 No_date   28:04   50.29 .777     .000
       [XIMP=.68:TIMP=.85]
       [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
       [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 491.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00100------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE RESERVOIR ->    1.0 02:A17           12.04    1.618 No_date   28:04   50.29  n/a     .000
                 out <=    1.0 01:A17STR        12.04     .460 No_date   28:31   50.29  n/a     .000
            overflow <=    1.0 03:A17OVF          .00     .000 No_date    0:00     .00  n/a     .000
      {MxStoUsed=.2771E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00101------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:ST-4            .35     .046 No_date   28:00   38.69 .598     .000
       [XIMP=.46:TIMP=.57]
       [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
       [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=  84.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00102------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE RESERVOIR ->    1.0 02:ST-4            .35     .046 No_date   28:00   38.69  n/a     .000
                 out <=    1.0 01:ST4STR          .35     .031 No_date   28:04   38.69  n/a     .000
            overflow <=    1.0 03:ST4OVF          .00     .000 No_date    0:00     .00  n/a     .000
      {MxStoUsed=.1424E-02  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00103------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:A18            5.30     .780 No_date   28:02   50.29 .777     .000
```

```
       [XIMP=.68:TIMP=.85]
       [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
       [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 326.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00104------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:A18             5.30     .780 No_date   28:02   50.29  n/a      .000
                out <=    1.0 01:A18STR          5.30     .206 No_date   28:27   50.29  n/a      .000
           overflow <=    1.0 03:A18OVF           .00     .000 No_date    0:00     .00  n/a      .000
      {MxStoUsed=.1232E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00105------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:DRAIN2        330.34    3.640 No_date   29:01   18.83  n/a      .000
                    +     1.0 02:D2              2.28     .046 No_date   29:04   29.30  n/a      .000
                    +     1.0 02:A17STR         12.04     .460 No_date   28:31   50.29  n/a      .000
                    +     1.0 02:A17OVF           .00     .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:ST4STR           .35     .031 No_date   28:04   38.69  n/a      .000
                    +     1.0 02:ST4OVF           .00     .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:A18STR          5.30     .206 No_date   28:27   50.29  n/a      .000
                    +     1.0 02:A18OVF           .00     .000 No_date    0:00     .00  n/a      .000
                 SUM=     1.0 01:PT3ST4        350.31    4.213 No_date   28:57   20.48  n/a      .000
R0010:C00106------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:PT3ST4        350.31    4.213 No_date   28:57   20.48  n/a      .000
     [RDT= 1.00] out<-    1.0 01:DRAIN3        350.31    4.037 No_date   29:17   20.48  n/a      .000
       [L/S/n=  525./ .230/.043]
       {Vmax=  .606:Dmax= 1.049}
R0010:C00107------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:D3              2.51     .072 No_date   28:44   32.13 .497      .000
       [CN= 86.0: N= 3.00: Tp=  .73]
       [IaREC= 4.00: SMIN= 17.43: SMAX=116.21: SK= .010]
       [InterEventTime=  12.00]
R0010:C00108------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:C1              3.41     .523 No_date   28:01   50.29 .777      .000
       [XIMP=.68:TIMP=.85]
       [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
       [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 261.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00109------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:C1              3.41     .523 No_date   28:01   50.29  n/a      .000
                out <=    1.0 01:C1-STR          3.41     .133 No_date   28:25   50.29  n/a      .000
           overflow <=    1.0 03:C1-OVF           .00     .000 No_date    0:00     .00  n/a      .000
      {MxStoUsed=.7930E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00110------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:ST-5             .45     .058 No_date   28:00   38.69 .598      .000
       [XIMP=.46:TIMP=.57]
       [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
       [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=  95.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00111------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:ST-5             .45     .058 No_date   28:00   38.69  n/a      .000
                out <=    1.0 01:ST5STR           .45     .040 No_date   28:04   38.69  n/a      .000
           overflow <=    1.0 03:ST5OVF           .00     .000 No_date    0:00     .00  n/a      .000
      {MxStoUsed=.1552E-02  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00112------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:DRAIN3        350.31    4.037 No_date   29:17   20.48  n/a      .000
                    +     1.0 02:D3              2.51     .072 No_date   28:44   32.13  n/a      .000
                    +     1.0 02:C1-STR          3.41     .133 No_date   28:25   50.29  n/a      .000
                    +     1.0 02:C1-OVF           .00     .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:ST5STR           .45     .040 No_date   28:04   38.69  n/a      .000
                    +     1.0 02:ST5OVF           .00     .000 No_date    0:00     .00  n/a      .000
                 SUM=     1.0 01:ST5-E         356.68    4.181 No_date   29:15   20.87  n/a      .000
R0010:C00113------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:STRAND          7.59     .759 No_date   28:11   49.05 .758      .000
       [XIMP=.64:TIMP=.85]
       [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
       [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1230.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00114------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:STRAND          7.59     .759 No_date   28:11   49.05  n/a      .000
                out <=    1.0 01:S-POND          7.59     .066 No_date   29:41   49.05  n/a      .000
           overflow <=    1.0 03:S-OVF            .00     .000 No_date    0:00     .00  n/a      .000
      {MxStoUsed=.2593E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00115------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:ST5-E         356.68    4.181 No_date   29:15   20.87  n/a      .000
                    +     1.0 02:S-POND          7.59     .066 No_date   29:41   49.05  n/a      .000
                    +     1.0 02:S-OVF            .00     .000 No_date    0:00     .00  n/a      .000
                 SUM=     1.0 01:SSAOUT        364.27    4.242 No_date   29:15   21.45  n/a      .000
R0010:C00116------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SSAOUT        364.27    4.242 No_date   29:15   21.45  n/a      .000
       fname :SSAOUT.0010
       remark:SSAOUT
R0010:C00117------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:Area-A         66.75    6.470 No_date   28:10   48.24 .746      .000
       [XIMP=.64:TIMP=.80]
       [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
       [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1155.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00118------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:Area-A         66.75    6.470 No_date   28:10   48.24  n/a      .000
       fname :Area-A.0010
       remark:SMWF-A Inflow
R0010:C00119------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:Area-A         66.75    6.470 No_date   28:10   48.24  n/a      .000
                out <=    1.0 01:SWMF-A         66.75     .465 No_date   29:54   48.24  n/a      .000
           overflow <=    1.0 03:SWMAOV           .00     .000 No_date    0:00     .00  n/a      .000
      {MxStoUsed=.2359E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00120------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SWMF-A         66.75     .465 No_date   29:54   48.24  n/a      .000
       fname :SWMF-A.0010
       remark:SMWF-A Outflow
R0010:C00121------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:SSAOUT        364.27    4.242 No_date   29:15   21.45  n/a      .000
                    +     1.0 02:SWMF-A         66.75     .465 No_date   29:54   48.24  n/a      .000
                    +     1.0 02:SWMAOV           .00     .000 No_date    0:00     .00  n/a      .000
                 SUM=     1.0 01:PT4ST5        431.02    4.657 No_date   29:18   25.60  n/a      .000
R0010:C00122------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:C6              1.87     .301 No_date   28:01   50.29 .777      .000
       [XIMP=.68:TIMP=.85]
       [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
       [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 193.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00123------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:C6              1.87     .301 No_date   28:01   50.29  n/a      .000
                out <=    1.0 01:C6-STR          1.87     .074 No_date   28:22   50.29  n/a      .000
           overflow <=    1.0 03:C6-OVF           .00     .000 No_date    0:00     .00  n/a      .000
      {MxStoUsed=.4376E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00124------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:C7              1.62     .262 No_date   28:01   50.29 .777      .000
       [XIMP=.68:TIMP=.85]
       [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
       [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 180.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00125------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:C7              1.62     .262 No_date   28:01   50.29  n/a      .000
                out <=    1.0 01:C7-STR          1.62     .064 No_date   28:22   50.29  n/a      .000
           overflow <=    1.0 03:C7-OVF           .00     .000 No_date    0:00     .00  n/a      .000
      {MxStoUsed=.3781E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00126------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:ST-6             .41     .053 No_date   28:00   38.69 .598      .000
       [XIMP=.46:TIMP=.57]
       [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
       [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=  91.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00127------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:ST-6             .41     .053 No_date   28:00   38.69  n/a      .000
                out <=    1.0 01:ST6STR           .41     .036 No_date   28:04   38.69  n/a      .000
           overflow <=    1.0 03:ST6OVF           .00     .000 No_date    0:00     .00  n/a      .000
      {MxStoUsed=.1514E-02  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00128------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:PT4ST5        431.02    4.657 No_date   29:18   25.60  n/a      .000
                    +     1.0 02:C6-STR          1.87     .074 No_date   28:22   50.29  n/a      .000
                    +     1.0 02:C6-OVF           .00     .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:C7-STR          1.62     .064 No_date   28:22   50.29  n/a      .000
                    +     1.0 02:C7-OVF           .00     .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:ST6STR           .41     .036 No_date   28:04   38.69  n/a      .000
                    +     1.0 02:ST6OVF           .00     .000 No_date    0:00     .00  n/a      .000
                 SUM=     1.0 01:PT5ST6        434.92    4.740 No_date   29:18   25.81  n/a      .000
R0010:C00129------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:PT5ST6        434.92    4.740 No_date   29:18   25.81  n/a      .000
     [RDT= 1.00] out<-    1.0 01:DRAIN4        434.92    4.599 No_date   29:31   25.81  n/a      .000
       [L/S/n=  324./ .100/.043]
       {Vmax=  .468:Dmax= 1.312}
R0010:C00130------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:D4              1.73     .063 No_date   28:35   34.48 .533      .000
       [CN= 88.0: N= 3.00: Tp=  .60]
       [IaREC= 4.00: SMIN= 14.94: SMAX= 99.61: SK= .010]
       [InterEventTime=  12.00]
R0010:C00131------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:Area-B         24.04    3.287 No_date   28:03   47.09 .728      .000
       [XIMP=.62:TIMP=.77]
       [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
       [Pervious     area: IAper= 4.67:SLPP=1.40:LGP=  50.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI=1.40:LGI= 693.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00132------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:Area-B         24.04    3.287 No_date   28:03   47.09  n/a      .000
                out <=    1.0 01:SWMF-B         24.04     .356 No_date   28:50   47.09  n/a      .000
           overflow <=    1.0 03:SWMBOVF          .00     .000 No_date    0:00     .00  n/a      .000
      {MxStoUsed=.7142E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00133------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:DRAIN4        434.92    4.599 No_date   29:31   25.81  n/a      .000
                    +     1.0 02:D4              1.73     .063 No_date   28:35   34.48  n/a      .000
                    +     1.0 02:SWMF-B         24.04     .356 No_date   28:50   47.09  n/a      .000
                    +     1.0 02:SWMBOVF          .00     .000 No_date    0:00     .00  n/a      .000
                 SUM=     1.0 01:D4-EX         460.69    4.958 No_date   29:31   26.95  n/a      .000
R0010:C00134------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:D4-EX         460.69    4.958 No_date   29:31   26.95  n/a      .000
     [RDT= 1.00] out<-    1.0 01:DRAIN5        460.69    4.881 No_date   29:37   26.95  n/a      .000
       [L/S/n=  413./ .160/.033]
       {Vmax=  .599:Dmax=  .896}
R0010:C00135------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:D5              1.90     .057 No_date   28:41   32.13 .497      .000
       [CN= 86.0: N= 3.00: Tp=  .69]
       [IaREC= 4.00: SMIN= 17.43: SMAX=116.21: SK= .010]
       [InterEventTime=  12.00]
R0010:C00136------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:O-13SDF         9.74     .371 No_date   28:22   30.32 .469      .000
       [CN= 81.0: N= 3.00: Tp=  .43]
       [IaREC= 4.00: SMIN= 25.21: SMAX=168.09: SK= .010]
       [InterEventTime=  12.00]
R0010:C00137------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:O-13SDF         9.74     .371 No_date   28:22   30.32  n/a      .000
                out <=    1.0 01:SDF             9.74     .040 No_date   31:17   30.32  n/a      .000
           overflow <=    1.0 03:OVFSDF           .00     .000 No_date    0:00     .00  n/a      .000
      {MxStoUsed=.1596E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00138------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:DRAIN5        460.69    4.881 No_date   29:37   26.95  n/a      .000
                    +     1.0 02:D5              1.90     .057 No_date   28:41   32.13  n/a      .000
                    +     1.0 02:SDF             9.74     .040 No_date   31:17   30.32  n/a      .000
                 SUM=     1.0 01:PT6MC         472.33    4.951 No_date   29:37   27.04  n/a      .000
R0010:C00139------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:O-15           10.67     .502 No_date   28:13   29.12 .450      .000
       [CN= 82.0: N= 3.00: Tp=  .30]
       [IaREC= 4.00: SMIN= 23.09: SMAX=153.94: SK= .010]
       [InterEventTime=  12.00]
R0010:C00140------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:PT6MC         472.33    4.951 No_date   29:37   27.04  n/a      .000
                    +     1.0 02:O-15           10.67     .502 No_date   28:13   29.12  n/a      .000
                 SUM=     1.0 01:M-C           483.00    5.029 No_date   29:36   27.09  n/a      .000
R0010:C00141------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:M-C           483.00    5.029 No_date   29:36   27.09  n/a      .000
     [RDT= 1.00] out<-    1.0 01:O-14Ch        483.00    4.686 No_date   30:11   27.09  n/a      .000
       [L/S/n=  845./ .100/.033]
       {Vmax=  .618:Dmax= 1.565}
R0010:C00142------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:O-14            5.00     .389 No_date   28:04   29.12 .450      .000
       [CN= 82.0: N= 3.00: Tp=  .13]
       [IaREC= 4.00: SMIN= 23.09: SMAX=153.94: SK= .010]
       [InterEventTime=  12.00]
R0010:C00143------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:O-14Ch        483.00    4.686 No_date   30:11   27.09  n/a      .000
                    +     1.0 02:O-14            5.00     .389 No_date   28:04   29.12  n/a      .000
                 SUM=     1.0 01:OKEEFE        488.00    4.709 No_date   30:11   27.11  n/a      .000
#******************************************************************************
#    Okeefe Pond
#    - Rating curve obtained assuming 40m3/ha in 24 hours for quality control
#      and a ratio of the catchment area to the West Clarke pond rating curve
#      from the MSS for the next coordinates
#******************************************************************************
R0010:C00144------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:S-1-D2         18.67     .308 No_date   29:12   26.85 .415      .000
       [CN= 77.0: N= 3.00: Tp= 1.12]
       [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
       [InterEventTime=  12.00]
R0010:C00145------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:S-1-D3          6.79     .102 No_date   29:24   26.85 .415      .000
       [CN= 77.0: N= 3.00: Tp= 1.28]
       [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
       [InterEventTime=  12.00]
R0010:C00146------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N_OK        53064.36   84.059 No_date   34:06   22.56  n/a      .000
                    +     1.0 02:OKEEFE        488.00    4.709 No_date   30:11   27.11  n/a      .000
                    +     1.0 02:S-1-D2         18.67     .308 No_date   29:12   26.85  n/a      .000
                    +     1.0 02:S-1-D3          6.79     .102 No_date   29:24   26.85  n/a      .000
                 SUM=     1.0 01:SN_OK       53577.82   85.805 No_date   33:41   22.60  n/a      .000
R0010:C00147------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_OK       53577.82   85.805 No_date   33:41   22.60  n/a      .000
       fname :SN_OK.0010
       remark:Total Flows at Okeefe Drain
#
# Hydrograph from Node Okeefe routed to Node at Foster Drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 6215
#
R0010:C00148------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_OK       53577.82   85.805 No_date   33:41   22.60  n/a      .000
     [RDT= 1.00] out<-    1.0 01:N_FO        53577.82   85.613 No_date   34:07   22.60  n/a      .000
       [L/S/n= 1183./ .076/.035]
       {Vmax= 1.103:Dmax= 2.861}
#******************************************************************************
#    Catchment FOSTER
#    - To Foster ditch (north of the Jock)
#    - Partially developed (medium density); remaining agricultural
#    - 2020-12-01 JFSA Foster area is 332 as per Foster SWMF Environmental Study Report, CH2MHILL, Aug 2013.
#    - 2020-12-01 decrease Foster drainage area from (373 HA) to (307.98 HA) after increasing Okeefe drainage area to (5
#    - 2021-02-12  update Foster area to 325.44 ha as measured from QGIS
#******************************************************************************
R0010:C00149------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:FOSTER        325.44   22.870 No_date   28:13   43.99 .680      .000
       [XIMP=.55:TIMP=.55]
       [LOSS= 2 :CN= 74.0]
       [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1473.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 36.67: SMAX=244.49: SK= .010]
#******************************************************************************
#    Foster Pond
#    - Rating curve obtained assuming 40m3/ha in 24 hours for quality control
#      and a ratio of the catchment area to the West Clarke pond rating curve
#      from the MSS for the next coordinates
#******************************************************************************
R0010:C00150------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:FOSTER        325.44   22.870 No_date   28:13   43.99  n/a      .000
                out <=    1.0 01:P_FOS         325.44    6.061 No_date   29:06   43.99  n/a      .000
           overflow <=    1.0 03:FO-OVF           .00     .000 No_date    0:00     .00  n/a      .000
      {MxStoUsed=.5862E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00151------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:P_FOS         325.44    6.061 No_date   29:06   43.99  n/a      .000
                    +     1.0 02:FO-OVF           .00     .000 No_date    0:00     .00  n/a      .000
                 SUM=     1.0 01:FOSTER-OUT    325.44    6.061 No_date   29:06   43.99  n/a      .000
#******************************************************************************
R0010:C00152------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:W_CLAR_BRA     73.29    7.523 No_date   28:05   47.94 .741      .000
       [XIMP=.60:TIMP=.65]
       [LOSS= 2 :CN= 77.0]
       [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 699.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 31.15: SMAX=207.66: SK= .010]
R0010:C00153------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:W_CLAR_BRA     73.29    7.523 No_date   28:05   47.94  n/a      .000
                out <=    1.0 01:MS_P10         73.29    1.136 No_date   29:00   47.94  n/a      .000
           overflow <=    1.0 03:P10-OVF          .00     .000 No_date    0:00     .00  n/a      .000
      {MxStoUsed=.1341E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00154------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:S-1-FO-D2       4.94     .083 No_date   29:11   26.85 .415      .000
       [CN= 77.0: N= 3.00: Tp= 1.10]
       [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
       [InterEventTime=  12.00]
R0010:C00155------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:FOSTER-OUT    325.44    6.061 No_date   29:06   43.99  n/a      .000
                    +     1.0 02:S-1-FO-D2       4.94     .083 No_date   29:11   26.85  n/a      .000
                 SUM=     1.0 01:980           330.38    6.143 No_date   29:06   43.73  n/a      .000
R0010:C00156------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:980           330.38    6.143 No_date   29:06   43.73  n/a      .000
       fname :980.0010
       remark:Total Flows at Station 980 on Foster Drain
#
# Hydrograph from Node Foster SWM (Station 980)to Node at station 520
# Channel X-Section obtained from RVCA Hydraulic Model - Station 980
#
R0010:C00157------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:980           330.38    6.143 No_date   29:06   43.73  n/a      .000
     [RDT= 1.00] out<-    1.0 01:980-out       330.38    5.938 No_date   29:11   43.73  n/a      .000
       [L/S/n=  460./ .043/.035]
       {Vmax=  .635:Dmax= 1.384}
R0010:C00158------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:S-1-FO-D1       5.11     .085 No_date   29:11   26.85 .415      .000
       [CN= 77.0: N= 3.00: Tp= 1.10]
       [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
       [InterEventTime=  12.00]
R0010:C00159------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:980-out       330.38    5.938 No_date   29:11   43.73  n/a      .000
                    +     1.0 02:S-1-FO-D1       5.11     .085 No_date   29:11   26.85  n/a      .000
                 SUM=     1.0 01:520           335.49    6.023 No_date   29:11   43.47  n/a      .000
R0010:C00160------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:520           335.49    6.023 No_date   29:11   43.47  n/a      .000
       fname :520.0010
       remark:Total Flows at Sation 520 on Foster Drain
# Hydrograph from Node at Station 520 (Foster Drain) to Node at station 6016 (Jock River)
# Channel X-Section obtained from RVCA Hydraulic Model - Station 520
#
R0010:C00161------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:520           335.49    6.023 No_date   29:11   43.47  n/a      .000
     [RDT= 1.00] out<-    1.0 01:520-out       335.49    5.972 No_date   29:28   43.48  n/a      .000
       [L/S/n=  860./ .587/.035]
       {Vmax= 1.395:Dmax=  .662}
R0010:C00162------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:S-1-FO-F-D     14.96     .267 No_date   29:04   26.85 .415      .000
       [CN= 77.0: N= 3.00: Tp= 1.01]
       [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
       [InterEventTime=  12.00]
R0010:C00163------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-D8          5.27     .768 No_date   28:00   48.63 .752      .000
       [XIMP=.65:TIMP=.65]
       [LOSS= 2 :CN= 75.0]
       [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .75:LGI= 187.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 33.81: SMAX=225.43: SK= .010]
R0010:C00164------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:S-1-A          75.88    1.915 No_date   28:36   26.85 .415      .000
       [CN= 77.0: N= 3.00: Tp=  .62]
       [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
       [InterEventTime=  12.00]
R0010:C00165------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:W_CLAR_UND     35.65     .596 No_date   29:11   26.85 .415      .000
       [CN= 77.0: N= 3.00: Tp= 1.10]
       [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
```

```
      [InterEventTime=  12.00]
R0010:C00166-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              1.0 02:N_FO      53577.82   85.613 No_date   34:07   22.60  n/a     .000
                  +      1.0 02:520-out     335.49    5.972 No_date   29:28   43.48  n/a     .000
                  +      1.0 02:MS_P10       73.29    1.136 No_date   29:00   47.94  n/a     .000
                  +      1.0 02:P10-OVF        .00     .000 No_date    0:00     .00  n/a     .000
                  +      1.0 02:W_CLAR_UND   35.65     .596 No_date   29:11   26.85  n/a     .000
                  +      1.0 02:S-1-FO-F-D   14.96     .267 No_date   29:04   26.85  n/a     .000
                  +      1.0 02:S-1-D8        5.27     .768 No_date   28:00   48.63  n/a     .000
                  +      1.0 02:S-1-A        75.88    1.915 No_date   28:36   26.85  n/a     .000
                 SUM=    1.0 01:SN_FO     54118.36   89.156 No_date   33:42   22.78  n/a     .000
R0010:C00167-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD             1.0 01:SN_FO     54118.36   89.156 No_date   33:42   22.78  n/a     .000
      fname :SN_FO.0010
      remark:Total Flows at Foster Drain
# Hydrograph from Node Foster routed to Node at Cedarview Road
# Channel X-Section obtained from RVCA Hydraulic Model - Station 6016
#
R0010:C00168-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->   1.0 02:SN_FO     54118.36   89.156 No_date   33:42   22.78  n/a     .000
 *   [RDT= 1.00] out<-   1.0 01:N_CE      54118.36   89.070 No_date   33:43   22.78  n/a     .000
      [L/S/n=  159./ .082/.035]
      {Vmax= 1.328:Dmax= 3.415}
#*****************************************************************************
#    Catchment S-1
#    - To Jock River (north and south of Jock)
#    - Primarily agricultural fields; portion of sand quarry
#*****************************************************************************
R0010:C00169-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    1.0 01:S-1-B        55.36    1.740 No_date   28:24   26.85 .415     .000
      [CN= 77.0: N= 3.00: Tp=  .45]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
#    -  JFSA 2021-02-24 change the name from S-1-BCDC to S-1-A and S-1-B. Change their TP values based on the new areas
#    -  JFSA 2021-02-24 "S-1-BCDC-1" and "S-1-BCDC-2" are not existing anymore. "S-1-BCDC-1" is part of "S-1-FO-D2" and
#    -  JFSA 2021-01-19, after adding Greenbank pond, "S-1-BCDC-3" is not existing anymore
R0010:C00170-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    1.0 01:S-1-D1       21.67     .371 No_date   29:08   26.85 .415     .000
      [CN= 77.0: N= 3.00: Tp= 1.07]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0010:C00171-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    1.0 01:S-1-D4        3.28     .055 No_date   29:11   26.85 .415     .000
      [CN= 77.0: N= 3.00: Tp= 1.10]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0010:C00172-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    1.0 01:S-1-D5       12.84     .215 No_date   29:11   26.85 .415     .000
      [CN= 77.0: N= 3.00: Tp= 1.10]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0010:C00173-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    1.0 01:S-1-D6        1.75     .029 No_date   29:11   26.85 .415     .000
      [CN= 77.0: N= 3.00: Tp= 1.10]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0010:C00174-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    1.0 01:S-1-D7        2.03     .034 No_date   29:11   26.85 .415     .000
      [CN= 77.0: N= 3.00: Tp= 1.10]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
#    Catchment W_CLAR
#    - To West Clarke Drain (south of the Jock)
#    - Subdivision with 43% imp. as per Barrhaven South MSS
#    - 2020-11-30 update CLARKE Tributary Drainage Area to  = 121 ha based on P598(04)-11
#    - 2020-11-30 split CLARKE Drainage Area to MAJOR and ALL
#*****************************************************************************
R0010:C00175-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD  1.0 01:W_CLAR_MJ     1.77     .229 No_date   28:00   43.97 .680     .000
      [XIMP=.46:TIMP=.59]
      [LOSS= 2 :CN= 77.0]
      [Pervious    area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious  area: IAimp= 1.57:SLPI=1.00:LGI= 109.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
# 5-Year + 12% Capture
R0010:C00176-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->   1.0 02:W_CLAR_MJ     1.77     .229 No_date   28:00   43.97  n/a     .000
                out <=   1.0 01:W_CLAR_MJn    1.77     .213 No_date   27:58   43.97  n/a     .000
           overflow <=   1.0 03:W_CLAR_MJj     .00     .013 No_date   28:00   43.97  n/a     .000
     {MxStoUsed=.8179E-04  m3, TotOvfVol=.1952E-03  m3, N-Ovf=    1, TotDurOvf=    0.hrs}
R0010:C00177-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD  1.0 01:W_CLAR_ALL  119.40   12.497 No_date   28:05   47.94 .741     .000
      [XIMP=.60:TIMP=.65]
      [LOSS= 2 :CN= 77.0]
      [Pervious    area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious  area: IAimp= 1.57:SLPI=1.00:LGI= 892.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0010:C00178-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              1.0 02:W_CLAR_ALL  119.40   12.497 No_date   28:05   47.94  n/a     .000
                  +      1.0 02:W_CLAR_MJj     .00     .013 No_date   28:00   43.97  n/a     .000
                 SUM=    1.0 01:W_CLAR      119.40   12.497 No_date   28:05   47.94  n/a     .000
R0010:C00179-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD             1.0 01:W_CLAR      119.40   12.497 No_date   28:05   47.94  n/a     .000
      fname :W_CLAR.0010
      remark:Total Flows to West Clarke
#*****************************************************************************
#    West Clarke Pond 2
#    - Rating curve obtained from Barrhaven South MSS modeling
#    - Tributary Drainage Area to MSS Pond 2 = 241 ha
#*****************************************************************************
R0010:C00180-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->   1.0 02:W_CLAR      119.40   12.497 No_date   28:05   47.94  n/a     .000
                out <=   1.0 01:MS_P2       119.40    3.959 No_date   28:33   47.94  n/a     .000
           overflow <=   1.0 03:P2-OVF         .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.2802E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
#*****************************************************************************
R0010:C00181-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              1.0 02:N_CE      54118.36   89.070 No_date   33:43   22.78  n/a     .000
                  +      1.0 02:S-1-D4        3.28     .055 No_date   29:11   26.85  n/a     .000
                  +      1.0 02:S-1-D5       12.84     .215 No_date   29:11   26.85  n/a     .000
                  +      1.0 02:MS_P2       119.40    3.959 No_date   28:33   47.94  n/a     .000
                  +      1.0 02:P2-OVF         .00     .000 No_date    0:00     .00  n/a     .000
                 SUM=    1.0 01:SN_CE     54253.88   89.884 No_date   33:43   22.84  n/a     .000
R0010:C00182-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD             1.0 01:SN_CE     54253.88   89.884 No_date   33:43   22.84  n/a     .000
      fname :SN_CE.0010
      remark:Total Flows before Station 5737 on Jock River
# Channel X-Section obtained from RVCA Hydraulic Model - Station 5737
# JFSA 2021-02-25 add station 5737 before station 5002. Station 5737 was extracted from the HEC-RAS model T:\PROJ\1474-1
# JFSA 2021-03-02  change the slope to 0.1% instead of 0.0175 to stabilize the model
R0010:C00183-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->   1.0 02:SN_CE     54253.88   89.884 No_date   33:43   22.84  n/a     .000
 *   [RDT= 1.00] out<-   1.0 01:5737      54253.88   86.609 No_date   35:45   22.84  n/a     .000
      [L/S/n=  270./ .018/.035]
      {Vmax=  .730:Dmax= 4.471}
R0010:C00184-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              1.0 02:5737      54253.88   86.609 No_date   35:45   22.84  n/a     .000
                  +      1.0 02:S-1-D1       21.67     .371 No_date   29:08   26.85  n/a     .000
                  +      1.0 02:S-1-D6        1.75     .029 No_date   29:11   26.85  n/a     .000
                  +      1.0 02:S-1-D7        2.03     .034 No_date   29:11   26.85  n/a     .000
                 SUM=    1.0 01:5002      54279.34   86.671 No_date   35:45   22.84  n/a     .000
R0010:C00185-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD             1.0 01:5002      54279.34   86.671 No_date   35:45   22.84  n/a     .000
      fname :5002.0010
      remark:Total Flows before Station 5002 on Jock River
# Hydrograph from Node Cedarview Road routed to Node at West Clarke Drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 5002
# JFSA 2021-02-19 Change the slope from 0.01 % (as per Stantec Report 2007) to 0.0255 % so the model will be more stable
# JFSA 2021-02-19 Change to three ROUTE CHANNEL with length 275 m each instead of one with 825 m length so the model wil
# JFSA 2021-02-26 change the length of 5002 route channel from 825 m to 736 m. That is because of adding station 5737 be
R0010:C00186-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->   1.0 02:5002      54279.34   86.671 No_date   35:45   22.84  n/a     .000
 *   [RDT= 1.00] out<-   1.0 01:N_WCa     54279.34   86.687 No_date   35:42   22.84  n/a     .000
      [L/S/n=  245./ .095/.035]
      {Vmax= 1.138:Dmax= 2.539}
R0010:C00187-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->   1.0 02:N_WCa     54279.34   86.687 No_date   35:42   22.84  n/a     .000
 *   [RDT= 1.00] out<-   1.0 01:N_WCb     54279.34   86.651 No_date   35:51   22.84  n/a     .000
      [L/S/n=  245./ .095/.035]
      {Vmax= 1.138:Dmax= 2.539}
R0010:C00188-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->   1.0 02:N_WCb     54279.34   86.651 No_date   35:51   22.84  n/a     .000
 *   [RDT= 1.00] out<-   1.0 01:N_WC      54279.34   86.639 No_date   35:58   22.84  n/a     .000
      [L/S/n=  245./ .095/.035]
      {Vmax= 1.138:Dmax= 2.539}
#*****************************************************************************
# Hydrograph from Node West Clarke routed to Node at Kennedy - Burnett Drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 4534
#
R0010:C00189-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->   1.0 02:N_WC      54279.34   86.639 No_date   35:58   22.84  n/a     .000
 *   [RDT= 1.00] out<-   1.0 01:N_KB      54279.34   86.222 No_date   36:19   22.84  n/a     .000
      [L/S/n= 1020./ .050/.035]
      {Vmax= 1.007:Dmax= 3.153}
#*****************************************************************************
#    Catchment KEN_BU
#    - To Kennedy-Burnett SWM Facility
#    - Outlets to Fraser-Clarke drain (north of the Jock)
#    - Medium density residential subdivision
#*****************************************************************************
#*****************************************************************************
#   Existing Kennedy-Burnett SWM Facility
#    - Rating curve obtained from URTKBP
#    - Tributary Drainage Area to Pond = 160 ha
#*****************************************************************************
R0010:C00190-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD  1.0 01:KB-01A       40.82    3.338 No_date   28:12   24.14 .373     .000
      [XIMP=.10:TIMP=.40]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious    area: IAper= 4.67:SLPP= .50:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious  area: IAimp=  .79:SLPI= .50:LGI= 522.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00191-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD      1.0 01:KB-01A       40.82    3.338 No_date   28:12   24.14  n/a     .000
     Major System   /    1.0 02:KB-01A-MJ      .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \    1.0 03:KB-01A-MN    40.82    3.338 No_date   28:12   24.14  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00192-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              1.0 02:KB-01A-MJ      .00     .000 No_date    0:00     .00  n/a     .000
                  +      1.0 02:KB-01A-MN    40.82    3.338 No_date   28:12   24.14  n/a     .000
                 SUM=    1.0 01:KB-01A-S     40.82    3.338 No_date   28:12   24.14  n/a     .000
R0010:C00193-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD  1.0 01:KB-01B       31.10    2.335 No_date   28:08   26.73 .413     .000
      [XIMP=.19:TIMP=.38]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious    area: IAper= 4.67:SLPP= .42:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious  area: IAimp=  .79:SLPI= .42:LGI= 455.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00194-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD      1.0 01:KB-01B       31.10    2.335 No_date   28:08   26.73  n/a     .000
     Major System   /    1.0 02:KB-01B-MJ      .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \    1.0 03:KB-01B-MN    31.10    1.585 No_date   27:59   26.78  n/a     .000
      {MjSysSto=.8272E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00195-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              1.0 02:KB-01B-MJ      .00     .000 No_date    0:00     .00  n/a     .000
                  +      1.0 02:KB-01B-MN    31.10    1.585 No_date   27:59   26.78  n/a     .000
                 SUM=    1.0 01:KB-01B-S     31.10    1.585 No_date   27:59   26.78  n/a     .000
R0010:C00196-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD  1.0 01:KB-01C       13.78    1.534 No_date   28:05   27.74 .429     .000
      [XIMP=.20:TIMP=.41]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious    area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious  area: IAimp=  .79:SLPI= .50:LGI= 303.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00197-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD      1.0 01:KB-01C       13.78    1.534 No_date   28:05   27.74  n/a     .000
     Major System   /    1.0 02:KB-01C-MJ      .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \    1.0 03:KB-01C-MN    13.78    1.350 No_date   28:00   27.93  n/a     .000
      {MjSysSto=.6901E+02, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00198-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              1.0 02:KB-01C-MJ      .00     .000 No_date    0:00     .00  n/a     .000
                  +      1.0 02:KB-01C-MN    13.78    1.350 No_date   28:00   27.93  n/a     .000
                 SUM=    1.0 01:KB-01C-S     13.78    1.350 No_date   28:00   27.93  n/a     .000
R0010:C00199-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD  1.0 01:KB-03        84.78    7.685 No_date   28:09   27.30 .422     .000
      [XIMP=.20:TIMP=.39]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious    area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious  area: IAimp=  .79:SLPI= .63:LGI= 752.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00200-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD      1.0 01:KB-03        84.78    7.685 No_date   28:09   27.30  n/a     .000
     Major System   /    1.0 02:KB-03-MJ       .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \    1.0 03:KB-03-MN     84.78    5.270 No_date   27:59   27.40  n/a     .000
      {MjSysSto=.2022E+04, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00201-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              1.0 02:KB-03-MJ       .00     .000 No_date    0:00     .00  n/a     .000
                  +      1.0 02:KB-03-MN     84.78    5.270 No_date   27:59   27.40  n/a     .000
                 SUM=    1.0 01:KB-03-S      84.78    5.270 No_date   27:59   27.40  n/a     .000
R0010:C00202-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD  1.0 01:KB-04         6.95    1.217 No_date   28:01   56.45 .873     .000
      [XIMP=.85:TIMP=.85]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious    area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious  area: IAimp=  .94:SLPI= .50:LGI= 215.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00203-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD      1.0 01:KB-04         6.95    1.217 No_date   28:01   56.45  n/a     .000
     Major System   /    1.0 02:KB-04-MJ       .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \    1.0 03:KB-04-MN      6.95     .503 No_date   27:46   56.53  n/a     .000
      {MjSysSto=.5392E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00204-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              1.0 02:KB-04-MJ       .00     .000 No_date    0:00     .00  n/a     .000
                  +      1.0 02:KB-04-MN      6.95     .503 No_date   27:46   56.53  n/a     .000
                 SUM=    1.0 01:KB-04-S       6.95     .503 No_date   27:46   56.53  n/a     .000
R0010:C00205-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD  1.0 01:KB-05         5.19     .983 No_date   28:00   59.76 .924     .000
      [XIMP=.93:TIMP=.93]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious    area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious  area: IAimp= 1.57:SLPI= .50:LGI= 186.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00206-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD  1.0 01:KB-06        12.93    2.536 No_date   28:00   57.57 .890     .000
      [XIMP=.87:TIMP=.87]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious    area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious  area: IAimp=  .94:SLPI=4.75:LGI= 294.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00207-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD      1.0 01:KB-06        12.93    2.536 No_date   28:00   57.57  n/a     .000
     Major System   /    1.0 02:KB-06-MJ       .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \    1.0 03:KB-06-MN     12.93    2.262 No_date   27:56   57.80  n/a     .000
      {MjSysSto=.6369E+02, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00208-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              1.0 02:KB-06-MJ       .00     .000 No_date    0:00     .00  n/a     .000
                  +      1.0 02:KB-06-MN     12.93    2.262 No_date   27:56   57.80  n/a     .000
                 SUM=    1.0 01:KB-06-S      12.93    2.262 No_date   27:56   57.80  n/a     .000
R0010:C00209-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD  1.0 01:KB-11         4.03     .686 No_date   28:00   48.04 .743     .000
      [XIMP=.68:TIMP=.68]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious    area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious  area: IAimp=  .79:SLPI=2.00:LGI= 164.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00210-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD      1.0 01:KB-11         4.03     .686 No_date   28:00   48.04  n/a     .000
     Major System   /    1.0 02:KB-11-MJ       .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \    1.0 03:KB-11-MN      4.03     .577 No_date   27:55   48.44  n/a     .000
      {MjSysSto=.2954E+02, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00211-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              1.0 02:KB-11-MJ       .00     .000 No_date    0:00     .00  n/a     .000
                  +      1.0 02:KB-11-MN      4.03     .577 No_date   27:55   48.44  n/a     .000
                 SUM=    1.0 01:KB-11-S       4.03     .577 No_date   27:55   48.44  n/a     .000
R0010:C00212-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD  1.0 01:S1            4.99    1.020 No_date   28:00   59.76 .924     .000
      [XIMP=.93:TIMP=.93]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious    area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious  area: IAimp= 1.57:SLPI=2.00:LGI= 182.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00213-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD  1.0 01:KB-15         2.15     .377 No_date   28:00   54.15 .837     .000
      [XIMP=.79:TIMP=.79]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious    area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious  area: IAimp=  .16:SLPI= .30:LGI= 120.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00214-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              1.0 02:KB-01A-S     40.82    3.338 No_date   28:12   24.14  n/a     .000
                  +      1.0 02:KB-01B-S     31.10    1.585 No_date   27:59   26.78  n/a     .000
                  +      1.0 02:KB-01C-S     13.78    1.350 No_date   28:00   27.93  n/a     .000
                  +      1.0 02:KB-03-S      84.78    5.270 No_date   27:59   27.40  n/a     .000
                  +      1.0 02:KB-04-S       6.95     .503 No_date   27:46   56.53  n/a     .000
                  +      1.0 02:KB-05         5.19     .983 No_date   28:00   59.76  n/a     .000
                  +      1.0 02:KB-06-S      12.93    2.262 No_date   27:56   57.80  n/a     .000
                  +      1.0 02:KB-11-S       4.03     .577 No_date   27:55   48.44  n/a     .000
                  +      1.0 02:KB-15         2.15     .377 No_date   28:00   54.15  n/a     .000
                  +      1.0 02:S1            4.99    1.020 No_date   28:00   59.76  n/a     .000
                 SUM=    1.0 01:KB-P1       206.72   16.418 No_date   28:01   31.86  n/a     .000
R0010:C00215-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->   1.0 02:KB-P1       206.72   16.418 No_date   28:01   31.86  n/a     .000
                out <=   1.0 01:KB-P1R      206.72   12.427 No_date   28:17   31.86  n/a     .000
           overflow <=   1.0 03:KB-P1ovf       .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.7282E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00216-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              1.0 02:KB-P1R      206.72   12.427 No_date   28:17   31.86  n/a     .000
                  +      1.0 02:KB-P1ovf       .00     .000 No_date    0:00     .00  n/a     .000
                 SUM=    1.0 01:KB-Pond1    206.72   12.427 No_date   28:17   31.86  n/a     .000
R0010:C00217-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD             1.0 01:KB-Pond1    206.72   12.427 No_date   28:17   31.86  n/a     .000
      fname :KB-Pond1.0010
      remark:Total Flows at KB first pond
R0010:C00218-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD  1.0 01:KB-07        10.86    2.042 No_date   28:00   57.07 .882     .000
      [XIMP=.86:TIMP=.86]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious    area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious  area: IAimp=  .79:SLPI=2.00:LGI= 269.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00219-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD      1.0 01:KB-07        10.86    2.042 No_date   28:00   57.07  n/a     .000
     Major System   /    1.0 02:KB-07-MJ       .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \    1.0 03:KB-07-MN     10.86    2.042 No_date   28:00   57.07  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00220-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              1.0 02:KB-07-MJ       .00     .000 No_date    0:00     .00  n/a     .000
                  +      1.0 02:KB-07-MN     10.86    2.042 No_date   28:00   57.07  n/a     .000
                 SUM=    1.0 01:KB-07-S      10.86    2.042 No_date   28:00   57.07  n/a     .000
R0010:C00221-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD  1.0 01:KB-08         6.61    1.072 No_date   28:00   46.33 .716     .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious    area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious  area: IAimp=  .79:SLPI=2.00:LGI= 210.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00222-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD      1.0 01:KB-08         6.61    1.072 No_date   28:00   46.33  n/a     .000
     Major System   /    1.0 02:KB-08-MJ       .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \    1.0 03:KB-08-MN      6.61    1.058 No_date   28:00   46.37  n/a     .000
      {MjSysSto=.9091E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00223-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              1.0 02:KB-08-MJ       .00     .000 No_date    0:00     .00  n/a     .000
                  +      1.0 02:KB-08-MN      6.61    1.058 No_date   28:00   46.37  n/a     .000
                 SUM=    1.0 01:KB-08-S       6.61    1.058 No_date   28:00   46.37  n/a     .000
R0010:C00224-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD  1.0 01:KB-09         2.60     .515 No_date   28:00   56.40 .872     .000
      [XIMP=.86:TIMP=.86]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious    area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious  area: IAimp= 1.57:SLPI=2.00:LGI= 132.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
```

```
R0010:C00225-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-10_1        2.37     .470 No_date   28:00   56.40 .872     .000
      [XIMP=.86:TIMP=.86]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=2.00:LGI= 126.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00226-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-10_2        1.14     .229 No_date   28:00   56.40 .872     .000
      [XIMP=.86:TIMP=.86]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=2.00:LGI=  87.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00227-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-12          4.86     .900 No_date   28:00   53.41 .826     .000
      [XIMP=.79:TIMP=.79]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.10:SLPI=2.00:LGI= 180.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00228-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-12          4.86     .900 No_date   28:00   53.41  n/a     .000
     Major System   /     1.0 02:KB-12-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-12-MN       4.86     .867 No_date   27:58   53.47  n/a     .000
      {MjSysSto=.3261E+01, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00229-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-12-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:KB-12-MN       4.86     .867 No_date   27:58   53.47  n/a     .000
                 SUM=     1.0 01:KB-12-S        4.86     .867 No_date   27:58   53.47  n/a     .000
R0010:C00230-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-13         10.19    1.611 No_date   28:00   46.33 .716     .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI=2.00:LGI= 261.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00231-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-13         10.19    1.611 No_date   28:00   46.33  n/a     .000
     Major System   /     1.0 02:KB-13-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-13-MN      10.19    1.611 No_date   28:00   46.33  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00232-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-13-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:KB-13-MN      10.19    1.611 No_date   28:00   46.33  n/a     .000
                 SUM=     1.0 01:KB-13-S       10.19    1.611 No_date   28:00   46.33  n/a     .000
R0010:C00233-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-14          5.47     .898 No_date   28:00   46.33 .716     .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI=2.00:LGI= 191.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00234-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-14          5.47     .898 No_date   28:00   46.33  n/a     .000
     Major System   /     1.0 02:KB-14-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-14-MN       5.47     .873 No_date   27:59   46.40  n/a     .000
      {MjSysSto=.1663E+01, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00235-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-14-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:KB-14-MN       5.47     .873 No_date   27:59   46.40  n/a     .000
                 SUM=     1.0 01:KB-14-S        5.47     .873 No_date   27:59   46.40  n/a     .000
R0010:C00236-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-16_2        3.42     .545 No_date   28:01   50.20 .776     .000
      [XIMP=.71:TIMP=.71]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .16:SLPI= .30:LGI= 151.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00237-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-Pond1     206.72   12.427 No_date   28:17   31.86  n/a     .000
                    +     1.0 02:KB-07-S       10.86    2.042 No_date   28:00   57.07  n/a     .000
                    +     1.0 02:KB-08-S        6.61    1.058 No_date   28:00   46.37  n/a     .000
                    +     1.0 02:KB-09          2.60     .515 No_date   28:00   56.40  n/a     .000
                    +     1.0 02:KB-10_1        2.37     .470 No_date   28:00   56.40  n/a     .000
                    +     1.0 02:KB-10_2        1.14     .229 No_date   28:00   56.40  n/a     .000
                    +     1.0 02:KB-12-S        4.86     .867 No_date   27:58   53.47  n/a     .000
                    +     1.0 02:KB-13-S       10.19    1.611 No_date   28:00   46.33  n/a     .000
                    +     1.0 02:KB-14-S        5.47     .873 No_date   27:59   46.40  n/a     .000
                    +     1.0 02:KB-16_2        3.42     .545 No_date   28:01   50.20  n/a     .000
                 SUM=     1.0 01:KB-P2        254.24   19.235 No_date   28:01   35.46  n/a     .000
R0010:C00238-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:KB-P2        254.24   19.235 No_date   28:01   35.46  n/a     .000
                out <=    1.0 01:KB-P2R       254.24   15.083 No_date   28:10   35.46  n/a     .000
           overflow <=    1.0 03:KB-P2ovf        .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.7575E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00239-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-P2R       254.24   15.083 No_date   28:10   35.46  n/a     .000
                    +     1.0 02:KB-P2ovf        .00     .000 No_date    0:00     .00  n/a     .000
                 SUM=     1.0 01:KB-Pond2     254.24   15.083 No_date   28:10   35.46  n/a     .000
R0010:C00240-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:KB-Pond2     254.24   15.083 No_date   28:10   35.46  n/a     .000
      fname :KB-Pond2.0010
      remark:Total Flows at KB second pond
R0010:C00241-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-16_1        2.80     .465 No_date   28:01   52.17 .806     .000
      [XIMP=.75:TIMP=.75]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .16:SLPI= .30:LGI= 137.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00242-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-Pond2     254.24   15.083 No_date   28:10   35.46  n/a     .000
                    +     1.0 02:KB-16_1        2.80     .465 No_date   28:01   52.17  n/a     .000
                 SUM=     1.0 01:KB-P3        257.04   15.295 No_date   28:08   35.64  n/a     .000
R0010:C00243-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:KB-P3        257.04   15.295 No_date   28:08   35.64  n/a     .000
                out <=    1.0 01:KB-P3R        12.26     .051 No_date   17:31   35.64  n/a     .000
           overflow <=    1.0 03:KB-P3ovf     244.78   15.243 No_date   28:09   35.64  n/a     .000
     {MxStoUsed=.1993E-02  m3, TotOvfVol=.8724E+01  m3, N-Ovf=    2, TotDurOvf=   23.hrs}
R0010:C00244-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-P3R        12.26     .051 No_date   17:31   35.64  n/a     .000
                    +     1.0 02:KB-P3ovf     244.78   15.243 No_date   28:09   35.64  n/a     .000
                 SUM=     1.0 01:KB-Pond3     257.04   15.294 No_date   28:09   35.64  n/a     .000
R0010:C00245-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:KB-Pond3     257.04   15.294 No_date   28:09   35.64  n/a     .000
      fname :KB-Pond3.0010
      remark:Total Flows at KB third pond
#****************************************************************************
#    EXISTING / PROPOSED Subcatchments (Kennedy-Burnett SWM Facility (118080), SWM Modeling Approach, NOVATECH Report Ju
#    - TO FRASER-CLARKE DRAIN
#****************************************************************************
R0010:C00246-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:FC-01          8.03    1.049 No_date   28:01   37.67 .582     .000
      [XIMP=.47:TIMP=.47]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 231.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00247-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:FC-01          8.03    1.049 No_date   28:01   37.67  n/a     .000
     Major System   /     1.0 02:FC-01-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:FC-01-MN       8.03     .756 No_date   28:17   37.91  n/a     .000
      {MjSysSto=.1270E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00248-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:FC-01-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:FC-01-MN       8.03     .756 No_date   27:55   37.91  n/a     .000
                 SUM=     1.0 01:FC-01-S        8.03     .756 No_date   27:55   37.91  n/a     .000
R0010:C00249-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:FC-02         16.05    2.930 No_date   28:01   59.76 .924     .000
      [XIMP=.93:TIMP=.93]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 327.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00250-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:FC-02         16.05    2.930 No_date   28:01   59.76  n/a     .000
     Major System   /     1.0 02:FC-02-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:FC-02-MN      16.05    1.159 No_date   27:46   59.94  n/a     .000
      {MjSysSto=.1407E+04, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00251-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:FC-02-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:FC-02-MN      16.05    1.159 No_date   27:46   59.94  n/a     .000
                 SUM=     1.0 01:FC-02-S       16.05    1.159 No_date   27:46   59.94  n/a     .000
R0010:C00252-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:FC-03          7.37    1.130 No_date   28:01   45.83 .708     .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 222.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00253-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:FC-03          7.37    1.130 No_date   28:01   45.83  n/a     .000
     Major System   /     1.0 02:FC-03-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:FC-03-MN       7.37     .358 No_date   27:45   45.93  n/a     .000
      {MjSysSto=.6763E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00254-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:FC-03-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:FC-03-MN       7.37     .358 No_date   27:45   45.93  n/a     .000
                 SUM=     1.0 01:FC-03-S        7.37     .358 No_date   27:45   45.93  n/a     .000
R0010:C00255-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:FC-04         12.87    1.906 No_date   28:01   45.83 .708     .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 293.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00256-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:FC-04         12.87    1.906 No_date   28:01   45.83  n/a     .000
     Major System   /     1.0 02:FC-04-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:FC-04-MN      12.87     .741 No_date   27:46   45.93  n/a     .000
      {MjSysSto=.9380E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00257-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:FC-04-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:FC-04-MN      12.87     .741 No_date   27:46   45.93  n/a     .000
                 SUM=     1.0 01:FC-04-S       12.87     .741 No_date   27:46   45.93  n/a     .000
#****************************************************************************
#    PROPOSED Subcatchments (Kennedy-Burnett SWM Facility (118080), SWM Modeling Approach, NOVATECH Report June, 2020)
#    - TO JOCK RIVER
#****************************************************************************
R0010:C00258-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:JR-01          8.24    1.257 No_date   28:01   45.83 .708     .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 234.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00259-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:JR-01          8.24    1.257 No_date   28:01   45.83  n/a     .000
     Major System   /     1.0 02:JR-01-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:JR-01-MN       8.24     .563 No_date   28:39   46.14  n/a     .000
      {MjSysSto=.4889E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00260-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:JR-01-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:JR-01-MN       8.24     .563 No_date   27:47   46.14  n/a     .000
                 SUM=     1.0 01:JR-01-S        8.24     .563 No_date   27:47   46.14  n/a     .000
R0010:C00261-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:JR-02          1.59     .264 No_date   28:00   45.83 .708     .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 103.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00262-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:JR-02          1.59     .264 No_date   28:00   45.83  n/a     .000
     Major System   /     1.0 02:JR-02-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:JR-02-MN       1.59     .153 No_date   27:51   46.12  n/a     .000
      {MjSysSto=.5453E+02, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00263-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:JR-02-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:JR-02-MN       1.59     .153 No_date   27:51   46.12  n/a     .000
                 SUM=     1.0 01:JR-02-S        1.59     .153 No_date   27:51   46.12  n/a     .000
#****************************************************************************
#    Catchment FRASER
#    - To Fraser-Clarke drain (north of the Jock)
#    - Developed land with assumed 43% imp.
#    - 2020-12-17 Change Fraser area to be 35.1 as measured from QGIS
#    - 2020-12-17 All Fraser is undeveloped (Nashyd)
#****************************************************************************
R0010:C00264-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:FRASER-DRN    13.65     .447 No_date   28:22   26.85 .415     .000
      [CN= 77.0: N= 3.00: Tp=  .43]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0010:C00265-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:FRASER-D      21.61     .514 No_date   28:40   26.85 .415     .000
      [CN= 77.0: N= 3.00: Tp=  .67]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0010:C00266-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-Pond3     257.04   15.294 No_date   28:09   35.64  n/a     .000
                    +     1.0 02:S-1-B         55.36    1.740 No_date   28:24   26.85  n/a     .000
                    +     1.0 02:FRASER-DRN    13.65     .447 No_date   28:22   26.85  n/a     .000
                    +     1.0 02:FRASER-D      21.61     .514 No_date   28:40   26.85  n/a     .000
                    +     1.0 02:N_KB       54279.34   86.222 No_date   36:19   22.84  n/a     .000
                    +     1.0 02:FC-01-S        8.03     .756 No_date   27:55   37.91  n/a     .000
                    +     1.0 02:FC-02-S       16.05    1.159 No_date   27:46   59.94  n/a     .000
                    +     1.0 02:FC-03-S        7.37     .358 No_date   27:45   45.93  n/a     .000
                 SUM=     1.0 01:4241       54658.45   86.752 No_date   36:15   22.92  n/a     .000
R0010:C00267-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:4241       54658.45   86.752 No_date   36:15   22.92  n/a     .000
      fname :4241.0010
      remark:Total Flows at Ken-Burnett Outlet
# Hydrograph from Node Ken-Burnett to station 3633
# Channel X-Section obtained from RVCA Hydraulic Model - Station 4241
#
R0010:C00268-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:4241       54658.45   86.752 No_date   36:15   22.92  n/a     .000
     [RDT= 1.00] out<-    1.0 01:4241-out   54658.45   86.790 No_date   36:12   22.92  n/a     .000
      [L/S/n=  294./ .109/.035]
      {Vmax= 1.177:Dmax= 2.026}
R0010:C00269-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:4241-out   54658.45   86.790 No_date   36:12   22.92  n/a     .000
                    +     1.0 02:FC-04-S       12.87     .741 No_date   27:46   45.93  n/a     .000
                    +     1.0 02:JR-01-S        8.24     .563 No_date   27:47   46.14  n/a     .000
                    +     1.0 02:JR-02-S        1.59     .153 No_date   27:51   46.12  n/a     .000
                 SUM=     1.0 01:SN_KB      54681.14   86.824 No_date   36:12   22.93  n/a     .000
R0010:C00270-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_KB      54681.14   86.824 No_date   36:12   22.93  n/a     .000
      fname :SN_KB.0010
      remark:HYD_COMMENT=["Total Flows before Station 3633]
# Hydrograph from Station 3633 to Node Todd
# Channel X-Section obtained from RVCA Hydraulic Model - Station 3633
# JFSA 2021-02-26 change the channel length (at station 3633) from 650m to 608m and change the slope from 0.0498% to 0.2
#
R0010:C00271-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_KB      54681.14   86.824 No_date   36:12   22.93  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N_TO       54681.14   86.765 No_date   36:18   22.93  n/a     .000
      [L/S/n=  608./ .247/.035]
      {Vmax= 1.560:Dmax= 1.526}
#****************************************************************************
#    Catchment Greenbank
#    - To Greenbank Drain (south of the Jock)
#    - JFSA 2021-01-18 add Greenbank pond as per JFSA, P598(06)-15, June 2016
#    - JFSA 2021-01-19 update area from 37.479 ha to 36.6 ha based on GIS measurements
#****************************************************************************
R0010:C00272-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:Greenbank     36.60    4.662 No_date   28:02   49.38 .763     .000
      [XIMP=.64:TIMP=.68]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 494.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0010:C00273-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:Greenbank     36.60    4.662 No_date   28:02   49.38  n/a     .000
                out <=    1.0 01:GreenB_MN     36.60    1.697 No_date   28:18   49.38  n/a     .000
           overflow <=    1.0 03:GreenB_MJ       .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.8299E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00274-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N_TO       54681.14   86.765 No_date   36:18   22.93  n/a     .000
                    +     1.0 02:GreenB_MJ       .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:GreenB_MN     36.60    1.697 No_date   28:18   49.38  n/a     .000
                 SUM=     1.0 01:GreenB     54717.74   86.895 No_date   36:17   22.95  n/a     .000
R0010:C00275-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:GreenB     54717.74   86.895 No_date   36:17   22.95  n/a     .000
      fname :GreenB.0010
      remark:Total Flows at Greenbank Drain
#****************************************************************************
#    Catchment TODD
#    - To Todd Drain (south of the Jock)
#    - Subdivision with 43% imp. as per Barrhaven South MSS
#    - 2020-11-30 increase imp. based on P598(04)-11
#    - 2020-11-30 update TODD Tributary Drainage Area to  = 146.015 ha based on P598(04)-11
#    - 2020-11-30 split TODD Drainage Area to MAJOR, MINOR, POND and ALL
#****************************************************************************
#    - JFSA 2021-01-19 add "TODD_MN1" as part of Clarke("W_CLAR_MJ") and remove it from Todd
R0010:C00276-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:TODD_MN2       2.10     .282 No_date   28:00   44.92 .694     .000
      [XIMP=.53:TIMP=.57]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 118.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0010:C00277-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:TODD_MN3        .12     .016 No_date   28:00   44.90 .694     .000
      [XIMP=.53:TIMP=.57]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI=  28.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0010:C00278-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:TODD_MJ       30.23    3.512 No_date   28:02   46.20 .714     .000
      [XIMP=.52:TIMP=.64]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 449.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0010:C00279-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:TODD_ALL     112.91   10.943 No_date   28:05   44.71 .691     .000
      [XIMP=.52:TIMP=.57]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 868.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0010:C00280-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:TODD_P         3.06     .451 No_date   28:00   48.23 .745     .000
      [XIMP=.63:TIMP=.63]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 143.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
# 5-Year + 12% Capture
R0010:C00281-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:TODD_MJ       30.23    3.512 No_date   28:02   46.20  n/a     .000
                out <=    1.0 01:TODD_MJn      30.14    3.314 No_date   28:00   46.20  n/a     .000
           overflow <=    1.0 03:TODD_MJj        .09     .190 No_date   28:03   46.20  n/a     .000
     {MxStoUsed=.4110E-03  m3, TotOvfVol=.4062E-02  m3, N-Ovf=    1, TotDurOvf=    0.hrs}
# 5-Year + 12% Capture
R0010:C00282-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:TODD_MN2       2.10     .282 No_date   28:00   44.92  n/a     .000
                out <=    1.0 01:TODD_MN2n      2.10     .268 No_date   27:58   44.92  n/a     .000
           overflow <=    1.0 03:TODD_MN2j       .00     .011 No_date   28:00   44.92  n/a     .000
     {MxStoUsed=.1267E-03  m3, TotOvfVol=.1440E-03  m3, N-Ovf=    1, TotDurOvf=    0.hrs}
R0010:C00283-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:TODD_MN3        .12     .016 No_date   28:00   44.90  n/a     .000
                out <=    1.0 01:TODD_MN3n       .12     .016 No_date   28:00   44.90  n/a     .000
           overflow <=    1.0 03:TODD_MN3j       .00     .000 No_date   28:00   44.90  n/a     .000
     {MxStoUsed=.1007E-03  m3, TotOvfVol=.1379E-05  m3, N-Ovf=    1, TotDurOvf=    0.hrs}
```

```
R0010:C00284------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A2             25.50    2.388 No_date   28:03   40.97 .633     .000
      [XIMP=.42:TIMP=.52]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 566.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0010:C00285------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A2             25.50    2.388 No_date   28:03   40.97  n/a     .000
     Major System   /     1.0 02:A2-MJ            .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A2-MN          25.50    1.818 No_date   27:57   40.97  n/a     .000
      {MjSysSto=.2896E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00286------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:TODD_MN2n       2.10     .268 No_date   27:58   44.92  n/a     .000
                    +     1.0 02:TODD_MN3n        .12     .016 No_date   28:00   44.90  n/a     .000
                    +     1.0 02:TODD_MJj         .09     .190 No_date   28:03   46.20  n/a     .000
                    +     1.0 02:TODD_P          3.06     .451 No_date   28:00   48.23  n/a     .000
                    +     1.0 02:TODD_ALL      112.91   10.943 No_date   28:05   44.71  n/a     .000
                    +     1.0 02:W_CLAR_MJn      1.77     .213 No_date   27:58   43.97  n/a     .000
                 SUM=     1.0 01:TODD          120.03   11.699 No_date   28:03   44.79  n/a     .000
R0010:C00287------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:TODD          120.03   11.699 No_date   28:03   44.79  n/a     .000
      fname :TODD.0010
      remark:Total Flows at Todd Drain
#*************************************************************************
#    Todd Pond 3
#    - Rating curve obtained from Barrhaven South MSS modeling
#    - stantec 2007, Tributary Drainage Area to MSS Pond 3 = 193 ha
#*************************************************************************
R0010:C00288------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:TODD          120.03   11.699 No_date   28:03   44.79  n/a     .000
                out <=    1.0 01:MS_P3         120.03    6.151 No_date   28:20   44.79  n/a     .000
           overflow <=    1.0 03:P3-OVF           .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.2461E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00289------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:GreenB      54717.74   86.895 No_date   36:17   22.95  n/a     .000
                    +     1.0 02:MS_P3         120.03    6.151 No_date   28:20   44.79  n/a     .000
                    +     1.0 02:P3-OVF           .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:TODD_MN2j        .00     .011 No_date   28:00   44.92  n/a     .000
                    +     1.0 02:A2-MJ            .00     .000 No_date    0:00     .00  n/a     .000
                 SUM=     1.0 01:SN_TO       54837.78   87.200 No_date   36:16   23.00  n/a     .000
R0010:C00290------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_TO       54837.78   87.200 No_date   36:16   23.00  n/a     .000
      fname :SN_TO.0010
      remark:Total Flows at Todd Drain
#
# Hydrograph from Todd Drain routed to Corrigan Drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 2462
# 2021-02-19 Change the slope from 0.033 % (as per Stantec Report 2007) to 0.05 % so the model will be more stable and g
R0010:C00291------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_TO       54837.78   87.200 No_date   36:16   23.00  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:N_TO        54837.78   87.112 No_date   36:28   23.00  n/a     .000
      [L/S/n=  280./ .050/.045]
      {Vmax=  .886:Dmax= 2.877}
R0010:C00292------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:N_TO        54837.78   87.112 No_date   36:28   23.00  n/a     .000
      fname :N_TO.0010
      remark:Total inflows at Station 2462
#*************************************************************************
#    Catchment CORRIG
#    - To Corrigan Drain (south of the Jock)
#    - Primarily Developed (medium density)
#    - JFSA JAN 2021, add Corrigan subcatchments as per IBI, July 2008
#*************************************************************************
R0010:C00293------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:corr1          15.87    2.113 No_date   28:01   48.23 .746     .000
      [XIMP=.63:TIMP=.63]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 325.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0010:C00294------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:corr1          15.87    2.113 No_date   28:01   48.23  n/a     .000
     Major System   /     1.0 02:corr1-MJ         .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:corr1-MN       15.87    1.818 No_date   28:09   48.38  n/a     .000
      {MjSysSto=.8936E+02, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00295------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:corr2          12.47     .209 No_date   29:11   26.85 .415     .000
      [CN= 77.0: N= 3.00: Tp= 1.10]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0010:C00296------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A1-Corrig      15.75    1.640 No_date   28:02   40.97 .633     .000
      [XIMP=.42:TIMP=.52]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 324.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0010:C00297------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A1-Corrig      15.75    1.640 No_date   28:02   40.97  n/a     .000
     Major System   /     1.0 02:A1-MJ            .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A1-MN          15.75    1.640 No_date   28:02   40.97  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00298------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:B1              2.77     .072 No_date   28:09   16.64 .257     .000
      [CN= 56.0: N= 3.00: Tp=  .23]
      [IaREC= 4.00: SMIN= 79.69: SMAX=531.24: SK= .010]
      [InterEventTime=  12.00]
R0010:C00299------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A4              1.27     .178 No_date   28:00   48.63 .752     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 253.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0010:C00300------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A4              1.27     .178 No_date   28:00   48.63  n/a     .000
     Major System   /     1.0 02:A4-MJ            .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A4-MN           1.27     .178 No_date   28:00   48.63  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00301------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:A1-MJ            .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:A1-MN          15.75    1.640 No_date   28:02   40.97  n/a     .000
                    +     1.0 02:corr1-MJ         .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:corr1-MN       15.87    1.818 No_date   28:09   48.38  n/a     .000
                    +     1.0 02:corr2          12.47     .209 No_date   29:11   26.85  n/a     .000
                    +     1.0 02:B1              2.77     .072 No_date   28:09   16.64  n/a     .000
                    +     1.0 02:A4-MN           1.27     .178 No_date   28:00   48.63  n/a     .000
                 SUM=     1.0 01:MH101          48.13    3.734 No_date   28:02   38.56  n/a     .000
R0010:C00302------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH101          48.13    3.734 No_date   28:02   38.56  n/a     .000
      fname :MH101.0010
      remark:Total Flows at MH101
R0010:C00303------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH101          48.13    3.734 No_date   28:02   38.56  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:101-102        48.13    3.662 No_date   28:03   38.56  n/a     .000
      [L/S/n=  368./ .540/.013]
      {Vmax= 3.084:Dmax= 1.088}
      [Din= 1.05:Dused= 1.33}
R0010:C00304------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:A2-MN          25.50    1.818 No_date   27:57   40.97  n/a     .000
                    +     1.0 02:101-102        48.13    3.662 No_date   28:03   38.56  n/a     .000
                 SUM=     1.0 01:MH102          73.63    5.480 No_date   28:03   39.39  n/a     .000
R0010:C00305------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH102          73.63    5.480 No_date   28:03   39.39  n/a     .000
      fname :MH102.0010
      remark:Total Flows at MH102
R0010:C00306------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A5              1.60     .236 No_date   28:01   51.11 .790     .000
      [XIMP=.71:TIMP=.71]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 300.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0010:C00307------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:A4-MJ            .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:A5              1.60     .236 No_date   28:01   51.11  n/a     .000
                 SUM=     1.0 01:A5T             1.60     .236 No_date   28:01   51.11  n/a     .000
R0010:C00308------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A5T             1.60     .236 No_date   28:01   51.11  n/a     .000
     Major System   /     1.0 02:A5-MJ            .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A5-MN           1.60     .236 No_date   28:01   51.11  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00309------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH102          73.63    5.480 No_date   28:03   39.39  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:102-103        73.63    5.291 No_date   28:06   39.39  n/a     .000
      [L/S/n=  504./ .280/.013]
      {Vmax= 2.654:Dmax= 1.421}
      [Din= 1.50:Dused= 1.73}
R0010:C00310------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:102-103        73.63    5.291 No_date   28:06   39.39  n/a     .000
                    +     1.0 02:A5-MN           1.60     .236 No_date   28:01   51.11  n/a     .000
                 SUM=     1.0 01:MH103          75.23    5.462 No_date   28:05   39.64  n/a     .000
R0010:C00311------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH103          75.23    5.462 No_date   28:05   39.64  n/a     .000
      fname :MH103.0010
      remark:Total Flows at MH103
R0010:C00312------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH103          75.23    5.462 No_date   28:05   39.64  n/a     .000
     [RDT= 1.00] out<-    1.0 01:103-104        75.23    5.382 No_date   28:07   39.64  n/a     .000
      [L/S/n=  438./ .460/.013]
      {Vmax= 3.265:Dmax= 1.205}
      [Din= 1.65:Dused= 1.65}
R0010:C00313------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A6              1.56     .232 No_date   28:00   51.11 .790     .000
      [XIMP=.71:TIMP=.71]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 280.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0010:C00314------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:A5-MJ            .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:A6              1.56     .232 No_date   28:00   51.11  n/a     .000
                 SUM=     1.0 01:A6T             1.56     .232 No_date   28:00   51.11  n/a     .000
R0010:C00315------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A6T             1.56     .232 No_date   28:00   51.11  n/a     .000
     Major System   /     1.0 02:A6-MJ            .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A6-MN           1.56     .232 No_date   28:00   51.11  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00316------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:A6-MN           1.56     .232 No_date   28:00   51.11  n/a     .000
                    +     1.0 02:103-104        75.23    5.382 No_date   28:07   39.64  n/a     .000
                    +     1.0 02:TODD_MJn       30.14    3.314 No_date   28:00   46.20  n/a     .000
                 SUM=     1.0 01:MH104         106.93    8.816 No_date   28:05   41.66  n/a     .000
R0010:C00317------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH104         106.93    8.816 No_date   28:05   41.66  n/a     .000
      fname :MH104.0010
      remark:Total Flows at MH104
R0010:C00318------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:B2             12.31    1.229 No_date   28:02   41.19 .637     .000
      [XIMP=.41:TIMP=.54]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 417.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0010:C00319------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:B2             12.31    1.229 No_date   28:02   41.19  n/a     .000
     Major System   /     1.0 02:B2-MJ            .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:B2-MN          12.31    1.029 No_date   27:58   41.28  n/a     .000
      {MjSysSto=.7604E+02, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00320------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:B2-MN          12.31    1.029 No_date   27:58   41.28  n/a     .000
     [RDT= 1.00] out<-    1.0 01:315-333        12.31    1.019 No_date   28:12   41.28  n/a     .000
      [L/S/n=  254./ .100/.013]
      {Vmax= 1.220:Dmax=  .838}
      [Din= 1.20:Dused= 1.20}
R0010:C00321------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:B3              5.59     .579 No_date   28:02   41.19 .637     .000
      [XIMP=.41:TIMP=.54]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 345.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0010:C00322------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:B3              5.59     .579 No_date   28:02   41.19  n/a     .000
     Major System   /     1.0 02:B3-MJ            .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:B3-MN           5.59     .459 No_date   27:57   41.35  n/a     .000
      {MjSysSto=.4795E+02, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00323------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:B3-MN           5.59     .459 No_date   27:57   41.35  n/a     .000
                    +     1.0 02:315-333        12.31    1.019 No_date   28:12   41.28  n/a     .000
                 SUM=     1.0 01:MH333          17.90    1.478 No_date   28:12   41.30  n/a     .000
R0010:C00324------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH333          17.90    1.478 No_date   28:12   41.30  n/a     .000
      fname :MH333.0010
      remark:Total Flows at MH333
R0010:C00325------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH333          17.90    1.478 No_date   28:12   41.30  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:333-335        17.90    1.450 No_date   28:14   41.30  n/a     .000
      [L/S/n=  251./ .100/.013]
      {Vmax= 1.300:Dmax= 1.054}
      [Din= 1.20:Dused= 1.28}
R0010:C00326------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:333-335        17.90    1.450 No_date   28:14   41.30  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:335-338        17.90    1.447 No_date   28:14   41.30  n/a     .000
      [L/S/n=  185./ .100/.013]
      {Vmax= 1.294:Dmax= 1.047}
      [Din= 1.20:Dused= 1.28}
R0010:C00327------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:335-338        17.90    1.447 No_date   28:14   41.30  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:338-340        17.90    1.418 No_date   28:15   41.30  n/a     .000
      [L/S/n=  233./ .100/.013]
      {Vmax= 1.325:Dmax=  .963}
      [Din= 1.35:Dused= 1.35}
R0010:C00328------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:B4              7.60     .768 No_date   28:02   41.19 .637     .000
      [XIMP=.41:TIMP=.54]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 388.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0010:C00329------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:B4              7.60     .768 No_date   28:02   41.19  n/a     .000
     Major System   /     1.0 02:B4-MJ            .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:B4-MN           7.60     .655 No_date   27:58   41.31  n/a     .000
      {MjSysSto=.3770E+02, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00330------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:338-340        17.90    1.418 No_date   28:15   41.30  n/a     .000
                    +     1.0 02:B4-MN           7.60     .655 No_date   27:58   41.31  n/a     .000
                 SUM=     1.0 01:MH340          25.50    2.022 No_date   28:12   41.30  n/a     .000
R0010:C00331------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH340          25.50    2.022 No_date   28:12   41.30  n/a     .000
      fname :MH340.0010
      remark:Total Flows at MH340
R0010:C00332------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH340          25.50    2.022 No_date   28:12   41.30  n/a     .000
     [RDT= 1.00] out<-    1.0 01:340-104        25.50    1.986 No_date   28:12   41.30  n/a     .000
      [L/S/n=  240./ .150/.013]
      {Vmax= 1.706:Dmax=  .895}
      [Din= 1.65:Dused= 1.65}
R0010:C00333------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:340-104        25.50    1.986 No_date   28:12   41.30  n/a     .000
                    +     1.0 02:MH104         106.93    8.816 No_date   28:05   41.66  n/a     .000
                 SUM=     1.0 01:MH104T        132.43   10.636 No_date   28:05   41.59  n/a     .000
R0010:C00334------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH104T        132.43   10.636 No_date   28:05   41.59  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:104-105       132.43   10.007 No_date   28:06   41.59  n/a     .000
      [L/S/n=  380./ .100/.013]
      {Vmax= 2.071:Dmax= 1.952}
      {HGTH= 2.30:WDTH= 2.63}
R0010:C00335------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:B5              2.20     .291 No_date   28:00   45.32 .701     .000
      [XIMP=.57:TIMP=.57]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 187.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0010:C00336------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:B5              2.20     .291 No_date   28:00   45.32  n/a     .000
     Major System   /     1.0 02:B5-MJ            .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:B5-MN           2.20     .260 No_date   27:57   45.39  n/a     .000
      {MjSysSto=.6886E+01, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00337------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A8               .96     .151 No_date   28:00   51.11 .790     .000
      [XIMP=.71:TIMP=.71]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 186.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0010:C00338------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:A6-MJ            .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:A8               .96     .151 No_date   28:00   51.11  n/a     .000
                 SUM=     1.0 01:A8T              .96     .151 No_date   28:00   51.11  n/a     .000
R0010:C00339------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A8T              .96     .151 No_date   28:00   51.11  n/a     .000
     Major System   /     1.0 02:A8-MJ            .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A8-MN            .96     .151 No_date   28:00   51.11  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00340------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:104-105       132.43   10.007 No_date   28:06   41.59  n/a     .000
                    +     1.0 02:B5-MN           2.20     .260 No_date   27:57   45.39  n/a     .000
                    +     1.0 02:A8-MN            .96     .151 No_date   28:00   51.11  n/a     .000
                    +     1.0 02:TODD_MN3j        .00     .000 No_date   28:00   44.90  n/a     .000
                 SUM=     1.0 01:MH105         135.59   10.343 No_date   28:05   41.72  n/a     .000
R0010:C00341------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH105         135.59   10.343 No_date   28:05   41.72  n/a     .000
      fname :MH105.0010
      remark:Total Flows at MH105
R0010:C00342------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
 *  DIVERT HYD      ->    1.0 01:A8-MJ            .00     .000 No_date    0:00     .00  n/a     .000
           diverted <=    1.0 02:A8-MJ-JR         .00     .000 No_date    0:00     .00  n/a     .000
           diverted <=    1.0 03:A8-MJ-B6         .00     .000 No_date    0:00     .00  n/a     .000
R0010:C00343------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    DIVERT HYD      ->    1.0 01:MH105         135.59   10.343 No_date   28:05   41.72  n/a     .000
           diverted <=    1.0 02:MH105-JR       28.70    7.335 No_date   28:05   41.72  n/a     .000
           diverted <=    1.0 03:MH105-B6      106.90    3.008 No_date   28:05   41.72  n/a     .000
R0010:C00344------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:B7              7.19     .792 No_date   28:01   41.19 .637     .000
      [XIMP=.41:TIMP=.54]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 211.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0010:C00345------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:B4-MJ            .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:B7              7.19     .792 No_date   28:01   41.19  n/a     .000
                 SUM=     1.0 01:B7-B4MJ         7.19     .792 No_date   28:01   41.19  n/a     .000
R0010:C00346------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:B7-B4MJ         7.19     .792 No_date   28:01   41.19  n/a     .000
     Major System   /     1.0 02:B7R-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:B7R-MN          7.19     .629 No_date   27:55   41.31  n/a     .000
      {MjSysSto=.5641E+02, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00347------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:B7R-MN          7.19     .629 No_date   27:55   41.31  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:360-106A        7.19     .628 No_date   28:11   41.31  n/a     .000
      [L/S/n=  167./ .100/.013]
      {Vmax= 1.089:Dmax=  .665}
      [Din= 1.05:Dused= 1.05}
R0010:C00348------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:B6              3.29     .376 No_date   28:00   41.19 .637     .000
      [XIMP=.41:TIMP=.54]
      [LOSS= 2 :CN= 75.0]
```

```
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 148.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0010:C00349------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:B6              3.29      .376 No_date   28:00   41.19  n/a      .000
     Major System   /     1.0 02:B6-MJ            .00      .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:B6-MN           3.29      .064 No_date   27:36   41.22  n/a      .000
      {MjSysSto=.3813E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00350------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:EX-LAND        32.50     3.367 No_date   28:02   41.86 .647      .000
      [XIMP=.50:TIMP=.50]
      [LOSS= 2 :CN= 74.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 465.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 36.67: SMAX=244.49: SK= .010]
R0010:C00351------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:EX-LAND        32.50     3.367 No_date   28:02   41.86  n/a      .000
     Major System   /     1.0 02:EX-LAND-MJ       .00      .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:EX-LAND-MN    32.50     2.275 No_date   27:55   41.99  n/a      .000
      {MjSysSto=.5949E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00352------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:B7R-MJ           .00      .000 No_date    0:00     .00  n/a      .000
                   +      1.0 02:EX-LAND-MJ       .00      .000 No_date    0:00     .00  n/a      .000
                   +      1.0 02:B5-MJ            .00      .000 No_date    0:00     .00  n/a      .000
                   +      1.0 02:B6-MJ            .00      .000 No_date    0:00     .00  n/a      .000
                   +      1.0 02:B6-MN           3.29      .064 No_date   27:36   41.22  n/a      .000
                   +      1.0 02:A8-MJ-B6         .00      .000 No_date    0:00     .00  n/a      .000
                SUM=      1.0 01:B6-B7ExMJ       3.29      .064 No_date   27:36   41.22  n/a      .000
R0010:C00353------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:B6-B7ExMJ       3.29      .064 No_date   27:36   41.22  n/a      .000
     Major System   /     1.0 02:B6R-MJ           .00      .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:B6R-MN          3.29      .064 No_date   27:36   41.22  n/a      .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00354------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH105-B6      106.90     3.008 No_date   28:05   41.72  n/a      .000
     [RDT= 1.00] out<-    1.0 01:105-106A      106.90     3.006 No_date   28:12   41.72  n/a      .000
      [L/S/n=  208./ .100/.013]
      {Vmax= 1.597:Dmax= 1.249}
      [Din= 1.80:Dused= 1.80}
R0010:C00355------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:360-106A        7.19      .628 No_date   28:11   41.31  n/a      .000
                   +      1.0 02:105-106A      106.90     3.006 No_date   28:12   41.72  n/a      .000
                   +      1.0 02:B6R-MN          3.29      .064 No_date   27:36   41.22  n/a      .000
                   +      1.0 02:B6R-MJ           .00      .000 No_date    0:00     .00  n/a      .000
                SUM=      1.0 01:MH106A        117.38     3.698 No_date   28:11   41.68  n/a      .000
R0010:C00356------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH106A        117.38     3.698 No_date   28:11   41.68  n/a      .000
      fname :MH106A.0010
      remark:Total Flows at MH106A
R0010:C00357------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH106A        117.38     3.698 No_date   28:11   41.68  n/a      .000
 *   [RDT= 1.00] out<-    1.0 01:106A-106      117.38     3.659 No_date   28:06   41.68  n/a      .000
      [L/S/n=  190./ .100/.013]
      {Vmax= 1.635:Dmax= 1.487}
      [Din= 1.80:Dused= 1.81}
R0010:C00358------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A9              2.44      .365 No_date   28:00   51.11 .790      .000
      [XIMP=.71:TIMP=.71]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 262.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0010:C00359------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A9              2.44      .365 No_date   28:00   51.11  n/a      .000
     Major System   /     1.0 02:A9-MJ            .00      .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:A9-MN           2.44      .365 No_date   28:00   51.11  n/a      .000
R0010:C00360------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:106A-106      117.38     3.659 No_date   28:06   41.68  n/a      .000
                   +      1.0 02:A9-MN           2.44      .365 No_date   28:00   51.11  n/a      .000
                SUM=      1.0 01:MH106         119.82     3.992 No_date   28:02   41.87  n/a      .000
R0010:C00361------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH106         119.82     3.992 No_date   28:02   41.87  n/a      .000
      fname :MH106.0010
      remark:Total Flows at MH106
R0010:C00362------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH106         119.82     3.992 No_date   28:02   41.87  n/a      .000
 *   [RDT= 1.00] out<-    1.0 01:106-107       119.82     3.962 No_date   28:03   41.87  n/a      .000
      [L/S/n=  123./ .100/.013]
      {Vmax= 1.666:Dmax= 1.530}
      [Din= 1.80:Dused= 1.86}
R0010:C00363------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A10             4.14      .416 No_date   28:01   38.46 .595      .000
      [XIMP=.35:TIMP=.47]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 183.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0010:C00364------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A10             4.14      .416 No_date   28:01   38.46  n/a      .000
     Major System   /     1.0 02:A10-MJ           .00      .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:A10-MN          4.14      .310 No_date   27:55   38.48  n/a      .000
      {MjSysSto=.4172E+02, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00365------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A11            10.61     1.251 No_date   28:01   45.36 .701      .000
      [XIMP=.53:TIMP=.62]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 379.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0010:C00366------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A11            10.61     1.251 No_date   28:01   45.36  n/a      .000
     Major System   /     1.0 02:A11-MJ           .00      .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:A11-MN         10.61      .993 No_date   27:56   45.38  n/a      .000
      {MjSysSto=.1016E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00367------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:106-107       119.82     3.962 No_date   28:03   41.87  n/a      .000
                   +      1.0 02:A10-MN          4.14      .310 No_date   27:55   38.48  n/a      .000
                   +      1.0 02:A11-MN         10.61      .993 No_date   27:56   45.38  n/a      .000
                SUM=      1.0 01:MH107         134.57     5.265 No_date   28:03   42.04  n/a      .000
R0010:C00368------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH107         134.57     5.265 No_date   28:03   42.04  n/a      .000
      fname :MH107.0010
      remark:Total Flows at MH107
R0010:C00369------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH107         134.57     5.265 No_date   28:03   42.04  n/a      .000
 *   [RDT= 1.00] out<-    1.0 01:107-119       134.57     5.251 No_date   28:05   42.04  n/a      .000
      [L/S/n=  114./ .120/.013]
      {Vmax= 1.912:Dmax= 1.640}
      [Din= 1.80:Dused= 2.00}
R0010:C00370------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:107-119       134.57     5.251 No_date   28:05   42.04  n/a      .000
 *   [RDT= 1.00] out<-    1.0 01:119-108       134.57     5.248 No_date   28:06   42.04  n/a      .000
      [L/S/n=   66./ .120/.013]
      {Vmax= 1.911:Dmax= 1.639}
      [Din= 1.80:Dused= 2.00}
R0010:C00371------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A12            12.29     1.385 No_date   28:01   41.19 .637      .000
      [XIMP=.41:TIMP=.54]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 183.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0010:C00372------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A12            12.29     1.385 No_date   28:01   41.19  n/a      .000
     Major System   /     1.0 02:A12-MJ           .00      .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:A12-MN         12.29     1.029 No_date   27:54   41.27  n/a      .000
      {MjSysSto=.1401E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00373------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A13             2.59      .368 No_date   28:01   51.11 .790      .000
      [XIMP=.71:TIMP=.71]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 379.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0010:C00374------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A13             2.59      .368 No_date   28:01   51.11  n/a      .000
     Major System   /     1.0 02:A13-MJ           .00      .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:A13-MN          2.59      .368 No_date   28:01   51.11  n/a      .000
R0010:C00375------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:Pond-Block      2.94      .309 No_date   28:00   38.90 .601      .000
      [XIMP=.41:TIMP=.41]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 183.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0010:C00376------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:119-108       134.57     5.248 No_date   28:06   42.04  n/a      .000
                   +      1.0 02:A13-MN          2.59      .368 No_date   28:01   51.11  n/a      .000
                   +      1.0 02:A12-MN         12.29     1.029 No_date   27:54   41.27  n/a      .000
                SUM=      1.0 01:MH108         149.45     6.598 No_date   28:04   42.14  n/a      .000
R0010:C00377------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH108         149.45     6.598 No_date   28:04   42.14  n/a      .000
      fname :MH108.0010
      remark:Total Flows at MH108
R0010:C00378------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH108         149.45     6.598 No_date   28:04   42.14  n/a      .000
 *   [RDT= 1.00] out<-    1.0 01:108-116       149.45     6.590 No_date   28:05   42.14  n/a      .000
      [L/S/n=   77./ .130/.013]
      {Vmax= 2.085:Dmax= 1.759}
      [Din= 1.80:Dused= 2.14}
R0010:C00379------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:108-116       149.45     6.590 No_date   28:05   42.14  n/a      .000
 *   [RDT= 1.00] out<-    1.0 01:116-corrig    149.45     6.577 No_date   28:06   42.14  n/a      .000
      [L/S/n=   80./ .130/.013]
      {Vmax= 2.084:Dmax= 1.758}
      [Din= 1.80:Dused= 2.14}
R0010:C00380------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:116-corrig    149.45     6.577 No_date   28:06   42.14  n/a      .000
                   +      1.0 02:Pond-Block      2.94      .309 No_date   28:00   38.90  n/a      .000
                SUM=      1.0 01:Corrigan      152.39     6.779 No_date   28:05   42.08  n/a      .000
R0010:C00381------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:Corrigan      152.39     6.779 No_date   28:05   42.08  n/a      .000
      fname :Corrigan.0010
      remark:HYD_COMMENT=["Total Flows at Corrigan Pond]
R0010:C00382------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:Corrigan      152.39     6.779 No_date   28:05   42.08  n/a      .000
                out <=    1.0 01:Co-P          152.39     6.100 No_date   28:15   42.07  n/a      .000
           overflow <=    1.0 03:Co-P-OVF         .00      .000 No_date    0:00     .00  n/a      .000
     {MxStoUsed=.1015E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00383------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:Co-P-OVF         .00      .000 No_date    0:00     .00  n/a      .000
                   +      1.0 02:Co-P          152.39     6.100 No_date   28:15   42.07  n/a      .000
                   +      1.0 02:N_TO        54837.78    87.112 No_date   36:28   23.00  n/a      .000
                   +      1.0 02:MH105-JR       28.70     7.335 No_date   28:05   41.72  n/a      .000
                   +      1.0 02:A8-MJ-JR         .00      .000 No_date    0:00     .00  n/a      .000
                   +      1.0 02:A9-MJ            .00      .000 No_date    0:00     .00  n/a      .000
                   +      1.0 02:A10-MJ           .00      .000 No_date    0:00     .00  n/a      .000
                   +      1.0 02:A11-MJ           .00      .000 No_date    0:00     .00  n/a      .000
                   +      1.0 02:A12-MJ           .00      .000 No_date    0:00     .00  n/a      .000
                   +      1.0 02:A13-MJ           .00      .000 No_date    0:00     .00  n/a      .000
                SUM=      1.0 01:corrig      55018.86    87.567 No_date   36:27   23.06  n/a      .000
R0010:C00384------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:corrig      55018.86    87.567 No_date   36:27   23.06  n/a      .000
      fname :corrig.0010
      remark:Total Flows at Corrigan Pond
#*****************************************************************************
#    Corrigan Pond 1
#    - Rating curve obtained from Barrhaven South MSS modeling
#    - Tributary Drainage Area to MSS Pond 1 = 145 ha
#*****************************************************************************
#
# Hydrograph from Corrigan Drain routed to Jockvale Road
# Channel X-Section obtained from RVCA Hydraulic Model - Station 2462
#
R0010:C00385------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:corrig      55018.86    87.567 No_date   36:27   23.06  n/a      .000
     [RDT= 1.00] out<-    1.0 01:N_MI        55018.86    87.553 No_date   36:29   23.06  n/a      .000
      [L/S/n=  580./ .445/.045]
      {Vmax= 1.805:Dmax= 1.646}
#*****************************************************************************
#    Catchment MILLS
#    - To SWM Facility north of the Jock
#    - Primarily residental development
#*****************************************************************************
R0010:C00386------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:MILLS         175.99    12.212 No_date   28:07   36.76 .568      .000
      [XIMP=.38:TIMP=.38]
      [LOSS= 2 :CN= 74.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI=1118.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 36.67: SMAX=244.49: SK= .010]
#*****************************************************************************
#    Chapman Mills SWM Pond
#    - Rating curve obtained from CCL hydraulic modeling
#*****************************************************************************
R0010:C00387------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:MILLS         175.99    12.212 No_date   28:07   36.76  n/a      .000
                out <=    1.0 01:MILL_P        175.99     4.030 No_date   28:43   36.76  n/a      .000
           overflow <=    1.0 03:MIL-OV           .00      .000 No_date    0:00     .00  n/a      .000
     {MxStoUsed=.2299E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00388------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N_MI        55018.86    87.553 No_date   36:29   23.06  n/a      .000
                   +      1.0 02:MIL-OV           .00      .000 No_date    0:00     .00  n/a      .000
                   +      1.0 02:MILL_P        175.99     4.030 No_date   28:43   36.76  n/a      .000
                SUM=      1.0 01:SN_MI       55194.85    88.022 No_date   36:28   23.10  n/a      .000
R0010:C00389------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_MI       55194.85    88.022 No_date   36:28   23.10  n/a      .000
      fname :SN_MI.0010
      remark:Total Flows at Jockvale Road
#
# Hydrograph from Jockvale Road routed to Heart's Desire
# Channel X-Section obtained from RVCA Hydraulic Model - Station 689
#
R0010:C00390------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_MI       55194.85    88.022 No_date   36:28   23.10  n/a      .000
     [RDT= 1.00] out<-    1.0 01:N_DE        55194.85    87.590 No_date   36:50   23.10  n/a      .000
      [L/S/n= 1962./ .223/.045]
      {Vmax= 1.403:Dmax= 2.091}
#*****************************************************************************
#    Catchment DESIRE
#    - To Jock River (north of the Jock)
#    - Rural-estate subdivision (Heart's Desire Community)
#*****************************************************************************
R0010:C00391------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:DESIRE         23.78     1.694 No_date   28:03   32.93 .509      .000
      [XIMP=.25:TIMP=.25]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 400.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
#*****************************************************************************
#    Catchment JOCKVA
#    - To Jockvale SWM Facility
#    - Residential development & golf course
#    - JFSA 2021-01-11 update JOCKVA after updating CORRIG as per IBI GROUP, July 2008.
#      JOCKVA area became 225.13 ha instead of 257.63 ha. JOCKVA separated into two areas JOCKVA and EX-LAND 32.5 ha as
#*****************************************************************************
R0010:C00392------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:JOCKVA        225.13    17.670 No_date   28:08   41.86 .647      .000
      [XIMP=.50:TIMP=.50]
      [LOSS= 2 :CN= 74.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI=1311.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 36.67: SMAX=244.49: SK= .010]
R0010:C00393------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:EX-LAND-MN     32.50     2.275 No_date   27:55   41.99  n/a      .000
                   +      1.0 02:JOCKVA        225.13    17.670 No_date   28:08   41.86  n/a      .000
                   +      1.0 02:B2-MJ            .00      .000 No_date    0:00     .00  n/a      .000
                   +      1.0 02:B3-MJ            .00      .000 No_date    0:00     .00  n/a      .000
                SUM=      1.0 01:JOCKVA-TO     257.63    19.945 No_date   28:08   41.88  n/a      .000
R0010:C00394------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:JOCKVA-TO     257.63    19.945 No_date   28:08   41.88  n/a      .000
      fname :JOCKVA-TO.0010
      remark:Total Flows at KB first pond
#*****************************************************************************
#    Jockvale SWM Facility
#    - Rating curve obtained from Jockvale Servicing Study (CCL 1999)
#*****************************************************************************
R0010:C00395------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:JOCKVA-TO     257.63    19.945 No_date   28:08   41.88  n/a      .000
                out <=    1.0 01:JOCK_P        257.63     6.542 No_date   28:42   41.88  n/a      .000
           overflow <=    1.0 03:JO-OVF           .00      .000 No_date    0:00     .00  n/a      .000
     {MxStoUsed=.4673E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00396------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N_DE        55194.85    87.590 No_date   36:50   23.10  n/a      .000
                   +      1.0 02:DESIRE         23.78     1.694 No_date   28:03   32.93  n/a      .000
                   +      1.0 02:JO-OVF           .00      .000 No_date    0:00     .00  n/a      .000
                   +      1.0 02:JOCK_P        257.63     6.542 No_date   28:42   41.88  n/a      .000
                SUM=      1.0 01:SN_DE       55476.26    88.294 No_date   36:48   23.19  n/a      .000
R0010:C00397------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_DE       55476.26    88.294 No_date   36:48   23.19  n/a      .000
      fname :SN_DE.0010
      remark:Total Flows at Heart's Desire
#
# Hydrograph from Heart's Desire routed to Rideau River
# Channel X-Section obtained from RVCA Hydraulic Model - Station 0
#
R0010:C00398------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_DE       55476.26    88.294 No_date   36:48   23.19  n/a      .000
     [RDT= 1.00] out<-    1.0 01:N1          55476.26    88.278 No_date   36:52   23.19  n/a      .000
      [L/S/n=  563./ .967/.045]
      {Vmax= 1.802:Dmax= 1.046}
#*****************************************************************************
#    Catchment S-2
#    - To Jock River (north and south)
#    - Undeveloped floodplain and river
#*****************************************************************************
R0010:C00399------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:S-2           102.94     2.957 No_date   28:20   23.57 .364      .000
      [CN= 72.0: N= 3.00: Tp=  .40]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
R0010:C00400------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N1          55476.26    88.278 No_date   36:52   23.19  n/a      .000
                   +      1.0 02:S-2           102.94     2.957 No_date   28:20   23.57  n/a      .000
                SUM=      1.0 01:SN_N1       55579.20    88.453 No_date   36:52   23.20  n/a      .000
R0010:C00401------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_N1       55579.20    88.453 No_date   36:52   23.20  n/a      .000
      fname :SN_N1.0010
      remark:Total Flows at Rideau River
#############################################################################
  ** END OF RUN :    24

*****************************************************************************************





 RUN#:COMMAND#
R0025:C00001----------------------------------------------------------------------------------------
     START
      [TZERO =    .00 hrs on        0]
      [METOUT=   2    (1=imperial, 2=metric output)]
      [NSTORM=   1 ]
      [NRUN  = 0025 ]
#*****************************************************************************
#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
#*****************************************************************************
#  Project Name: [Jock River]    Project Number: [1474-16]
#  Date        : 04-03-2021
#  Modeller    : [M.M.]
#  Company     : JFSAinc.
```

```
#  License #   :  2549237
#*******************************************************************************
# CALIBRATION OF SUMMER MODEL PARAMETERS
# USING CONTINUOUS SIMULATIONS
# Rainfall data from JFSA raingauge installed at site + other gauges by the City
# Use data collected from May 1st to July 14, 2003
# 2020-11-30 change TMJSTO in COMPUTE DUALHYD (TMJSTO = 0.1 instead of 0.0001)
# 2020-12-01 correct pond curve values
# 2020-12-01 change W_CLAR_BRAZ XIMP to 0.55, SLPI=[0.5](%) (impervious slope), and LGI up to 700m
# 2021-02-19 Change the slope for ROUTE CHANNEL Station 2462 (NHYDout=["N_TO"] ,NHYDin=["SN_TO"]) from 0.033 % (as per S
# 2021-02-19 Change the slope for ROUTE CHANNEL Station 5002 (NHYDout=["N_WC"] ,NHYDin=["SN_CE"]) from 0.01 % (as per St
# ------------------------------------------------------------------------------
R0025:C00002-------------------------------------------------------------------------------------
     READ STORM
      Filename = storm.001
      Comment  = Pluie SCS de 24 hres 1:25 ans pour Ottawa CDA
      [SDT=10.00:SDUR=  24.00:PTOT=  74.39]
R0025:C00003-------------------------------------------------------------------------------------
     MODIFY STORM
      [RFACT=  1.00:TSHIFT= 960.00 min]
      [SDT=10.00:SDUR=  40.00:PTOT=  74.39]
R0025:C00004-------------------------------------------------------------------------------------
     DEFAULT VALUES
      Filename = T:\PROJ\1474-16\Design\20201026-QuantityControlAnalysis\SWMHYMO\SMR-Model\updated3\CitiGate.DEF
      ICASEdv  = 1 (read and print data)
      FileTitle= File comment: [Based onvarious calibration exercises in Onta
                 THE FOLLOWING PARAMETERS ARE USED IN THE DESIGN STANDHYD COM
      Horton's infiltration equation parameters:
      [Fo= 76.20 mm/hr] [Fc=13.20 mm/hr] [DCAY= 4.14 /hr] [F=  .00 mm]
      Parameters for PERVIOUS surfaces in STANDHYD:
      [IAper=   4.67 mm] [LGP=50.00 m] [MNP= .250]
      Parameters for IMPERVIOUS surfaces in STANDHYD:
      [IAimp=   1.57 mm] [CLI= 1.50]   [MNI= .013]
      Parameters used in NASHYD:
      [Ia=   4.67 mm] [N= 3.00]
      Average monthly Pan Evaporation data in    (mm)
   JAN   FEB   MAR   APR   MAY   JUN   JUL   AUG   SEP   OCT   NOV   DEC
   .00   .00   .00   .00   .00   .00   .00   .00   .00   .00   .00   .00
      Average monthly Potential Evapotranspiration in    (mm)
   JAN   FEB   MAR   APR   MAY   JUN   JUL   AUG   SEP   OCT   NOV   DEC
   .00   .00   .00   .00   .00   .00   .00   .00   .00   .00   .00   .00
R0025:C00005-------------------------------------------------------------------------------------
     COMPUTE API
      [APIini= 50.00: APIkdy= .8500: APIkdt= .9989]
      {APImax=106.76: APIavg= 65.09: APImin= 44.87}
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.32
R0025:C00006------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:JR_HW       3680.00   15.500 No_date   36:57   25.80 .347     .000
      [CN= 64.0: N= 3.00: Tp= 7.13]
      [IaREC= 4.00: SMIN= 57.05: SMAX=380.32: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.32
R0025:C00007------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_13        971.00    5.778 No_date   32:34   24.02 .323     .000
      [CN= 61.0: N= 3.00: Tp= 3.76]
      [IaREC= 4.00: SMIN= 64.50: SMAX=430.01: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.80
R0025:C00008------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:JR_GWM      3074.00    7.521 No_date   39:59   20.65 .278     .000
      [CN= 55.0: N= 3.00: Tp=11.33]
      [IaREC= 4.00: SMIN= 83.24: SMAX=554.96: SK= .010]
      [InterEventTime=  12.00]
R0025:C00009------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:JR_ASH      1781.00   14.166 No_date   32:40   31.50 .423     .000
      [CN= 72.0: N= 3.00: Tp= 3.91]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
R0025:C00010------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_11        500.00    7.521 No_date   29:22   27.01 .363     .000
      [CN= 66.0: N= 3.00: Tp= 1.24]
      [IaREC= 4.00: SMIN= 52.62: SMAX=350.79: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.80
R0025:C00011------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:NN_CK       1917.00   10.351 No_date   34:27   27.01 .363     .000
      [CN= 66.0: N= 3.00: Tp= 5.29]
      [IaREC= 4.00: SMIN= 52.62: SMAX=350.79: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.52
R0025:C00012------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_10       5666.00   27.457 No_date   37:54   31.50 .423     .000
      [CN= 72.0: N= 3.00: Tp= 8.00]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.75
R0025:C00013------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:KG_CK       8376.00   26.276 No_date   39:59   27.01 .363     .000
      [CN= 66.0: N= 3.00: Tp=11.66]
      [IaREC= 4.00: SMIN= 52.62: SMAX=350.79: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.68
R0025:C00014------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_9        1132.00   11.752 No_date   30:54   30.18 .406     .000
      [CN= 70.0: N= 3.00: Tp= 2.51]
      [IaREC= 4.00: SMIN= 43.07: SMAX=287.10: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.82
R0025:C00015------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:NC_CK       4464.00   13.075 No_date   39:59   24.61 .331     .000
      [CN= 62.0: N= 3.00: Tp=11.32]
      [IaREC= 4.00: SMIN= 61.90: SMAX=412.66: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.80
R0025:C00016------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_8         131.00    2.266 No_date   28:57   25.20 .339     .000
      [CN= 63.0: N= 3.00: Tp=  .90]
      [IaREC= 4.00: SMIN= 59.42: SMAX=396.11: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.65
R0025:C00017------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:HB_DR       3854.00   15.333 No_date   38:34   27.01 .363     .000
      [CN= 66.0: N= 3.00: Tp= 8.42]
      [IaREC= 4.00: SMIN= 52.62: SMAX=350.79: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.82
R0025:C00018------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_7        3197.00   11.663 No_date   36:24   21.75 .292     .000
      [CN= 57.0: N= 3.00: Tp= 6.65]
      [IaREC= 4.00: SMIN= 76.32: SMAX=508.81: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.75
R0025:C00019------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_6         165.00    1.076 No_date   33:03   27.63 .371     .000
      [CN= 67.0: N= 3.00: Tp= 4.18]
      [IaREC= 4.00: SMIN= 50.55: SMAX=336.97: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.67
R0025:C00020------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:VG_DR       1332.00    7.882 No_date   35:14   31.50 .423     .000
      [CN= 72.0: N= 3.00: Tp= 5.95]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
R0025:C00021------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_5         224.00    6.882 No_date   28:45   35.66 .479     .000
      [CN= 77.0: N= 3.00: Tp=  .75]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.20
R0025:C00022------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:FL_CK       4945.00   37.664 No_date   33:18   32.85 .442     .000
      [CN= 74.0: N= 3.00: Tp= 4.45]
      [IaREC= 4.00: SMIN= 36.67: SMAX=244.49: SK= .010]
      [InterEventTime=  12.00]
R0025:C00023------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_5A2        20.00     .798 No_date   28:35   39.36 .529     .000
      [CN= 81.0: N= 3.00: Tp=  .62]
      [IaREC= 4.00: SMIN= 25.21: SMAX=168.09: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.61
R0025:C00024------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_5A1      1412.00    7.480 No_date   37:50   34.24 .460     .000
      [CN= 75.0: N= 3.00: Tp= 8.00]
      [IaREC= 4.00: SMIN= 33.81: SMAX=225.43: SK= .010]
      [InterEventTime=  12.00]
R0025:C00025------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_4         585.00   10.942 No_date   29:56   39.36 .529     .000
      [CN= 81.0: N= 3.00: Tp= 1.75]
      [IaREC= 4.00: SMIN= 25.21: SMAX=168.09: SK= .010]
      [InterEventTime=  12.00]
R0025:C00026------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:LM_CK       1021.00   14.476 No_date   30:46   38.60 .519     .000
      [CN= 80.0: N= 3.00: Tp= 2.46]
      [IaREC= 4.00: SMIN= 26.32: SMAX=175.50: SK= .010]
      [InterEventTime=  12.00]
R0025:C00027------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_2         177.00    5.438 No_date   28:45   35.66 .479     .000
      [CN= 77.0: N= 3.00: Tp=  .75]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0025:C00028------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SM_DR       1122.00   13.229 No_date   31:45   39.36 .529     .000
      [CN= 81.0: N= 3.00: Tp= 3.25]
      [IaREC= 4.00: SMIN= 25.21: SMAX=168.09: SK= .010]
      [InterEventTime=  12.00]
R0025:C00029------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:MO_DR       2737.00   29.508 No_date   31:30   34.94 .470     .000
      [CN= 76.0: N= 3.00: Tp= 3.03]
      [IaREC= 4.00: SMIN= 32.46: SMAX=216.39: SK= .010]
      [InterEventTime=  12.00]
#
# Routing hydrographs
#
# Starting with the addition of Jock River Headwater and Subwatershed 13
#
R0025:C00030------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                 1.0 02:JR_HW       3680.00   15.500 No_date   36:56   25.80  n/a     .000
                      +     1.0 02:SW_13        971.00    5.778 No_date   32:34   24.02  n/a     .000
                   SUM=     1.0 01:S_N13       4651.00   19.777 No_date   35:26   25.42  n/a     .000
#
# Sum of hydrographs from Node 13 routed to Node 13A
# (Approximated cross-section - see cross-section 258)
# Use n=0.04 for summer conditions and n=0.025 for spring conditions
#
R0025:C00031------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->      1.0 02:S_N13       4651.00   19.777 No_date   35:26   25.42  n/a     .000
     [RDT= 1.00] out<-      1.0 01:N13A        4651.00   15.935 No_date   39:17   25.42  n/a     .000
      [L/S/n= 9074./ .022/.040]
      {Vmax=  .548:Dmax= 3.659}
#
# Addition of Subwatershed Jock River at Goodwood Marsh to Node 13A
#
R0025:C00032------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                 1.0 02:N13A        4651.00   15.935 No_date   39:17   25.42  n/a     .000
                      +     1.0 02:JR_GWM      3074.00    7.521 No_date   39:59   20.65  n/a     .000
                   SUM=     1.0 01:SN13A       7725.00   23.402 No_date   39:59   23.52  n/a     .000
#
# Insertion of a reservoir to simulate the effects of the Goodwood Marsh
#
R0025:C00033------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->      1.0 02:SN13A       7725.00   23.402 No_date   39:59   23.52  n/a     .000
                 out <=     1.0 01:RES_GM      7725.00    3.678 No_date   60:27   23.52  n/a     .000
     {MxStoUsed=.1192E+03  m3}
#
R0025:C00034------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD                1.0 01:RES_GM      7725.00    3.678 No_date   60:27   23.52  n/a     .000
      fname :H_RESGM
      remark:Outflow from Res GM
# Output of Reservoir Goodwood Marsh routed from Node 13A to Node 12
# (Approximated cross-section - see cross-section 258)
# Use n=0.04 for summer conditions and n=0.025 for spring conditions
R0025:C00035------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->      1.0 02:RES_GM      7725.00    3.678 No_date   60:27   23.52  n/a     .000
     [RDT= 1.00] out<-      1.0 01:N12         7725.00    3.675 No_date   63:05   23.52  n/a     .000
      [L/S/n= 5926./ .076/.040]
      {Vmax=  .552:Dmax= 1.524}
#
# Addition of Subwatershed Jock River at Ashton to Node 12
#
R0025:C00036------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                 1.0 02:N12         7725.00    3.675 No_date   63:05   23.52  n/a     .000
                      +     1.0 02:JR_ASH      1781.00   14.166 No_date   32:40   31.50  n/a     .000
                   SUM=     1.0 01:S_N12       9506.00   16.182 No_date   32:43   25.02  n/a     .000
R0025:C00037------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD                1.0 01:S_N12       9506.00   16.182 No_date   32:43   25.02  n/a     .000
      fname :H_SN12
      remark:flow at S_N12 near Ashton
#
# Sum of hydrographs from Node 12 routed to Node 11
# (Approximated cross-section - see cross-section 258)
# Use n=0.04 for summer conditions and n=0.025 for spring conditions
#
# Sum of hydrographs from Node 12 routed to Node 11 with Dummy section 248
#
R0025:C00038------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->      1.0 02:S_N12       9506.00   16.182 No_date   32:43   25.02  n/a     .000
     [RDT= 1.00] out<-      1.0 01:Dum11       9506.00   16.007 No_date   33:02   25.02  n/a     .000
      [L/S/n=  972./ .054/.040]
      {Vmax=  .721:Dmax= 2.847}
#
# Addition of Subwatershed 11 and No Name Creek to Node 11
#
R0025:C00039------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                 1.0 02:Dum11       9506.00   16.007 No_date   33:02   25.02  n/a     .000
                      +     1.0 02:SW_11        500.00    7.521 No_date   29:22   27.01  n/a     .000
                      +     1.0 02:NN_CK       1917.00   10.351 No_date   34:27   27.01  n/a     .000
                   SUM=     1.0 01:S_N11      11923.00   27.908 No_date   33:04   25.42  n/a     .000
#
# Sum of hydrographs from Node 11 routed to Node 10
# Section 1
#
R0025:C00040------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->      1.0 02:S_N11      11923.00   27.908 No_date   33:04   25.42  n/a     .000
     [RDT= 1.00] out<-      1.0 01:N10        11923.00   18.039 No_date   40:01   25.42  n/a     .000
      [L/S/n=14028./ .157/.040]
      {Vmax=  .464:Dmax= 1.329}
#
# Addition of Subwatershed 10 to Node 10
#
R0025:C00041------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                 1.0 02:N10        11923.00   18.039 No_date   40:01   25.42  n/a     .000
                      +     1.0 02:SW_10       5666.00   27.457 No_date   37:54   31.50  n/a     .000
                   SUM=     1.0 01:S_N10      17589.00   45.026 No_date   38:35   27.38  n/a     .000
R0025:C00042------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD                1.0 01:S_N10      17589.00   45.026 No_date   38:35   27.38  n/a     .000
      fname :H_SN10
      remark:flow at S_N10: N10 + SW_10
# Addition of Kings Creek to S_N10
#
R0025:C00043------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                 1.0 02:S_N10      17589.00   45.026 No_date   38:35   27.38  n/a     .000
                      +     1.0 02:KG_CK       8376.00   26.276 No_date   39:59   27.01  n/a     .000
                   SUM=     1.0 01:S_N10A     25965.00   70.812 No_date   39:59   27.26  n/a     .000
#
# Sum of hydrographs from Node 10 routed to Node 9
# Section 2
#
R0025:C00044------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->      1.0 02:S_N10A     25965.00   70.812 No_date   39:59   27.26  n/a     .000
     [RDT= 1.00] out<-      1.0 01:N9         25965.00   69.032 No_date   39:59   27.26  n/a     .000
      [L/S/n= 3982./ .075/.040]
      {Vmax=  .718:Dmax= 1.889}
#
# Addition of Subwatershed 9 and Nichols Creek to Node 9
#
R0025:C00045------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                 1.0 02:N9         25965.00   69.032 No_date   39:59   27.26  n/a     .000
                      +     1.0 02:SW_9        1132.00   11.752 No_date   30:54   30.18  n/a     .000
                      +     1.0 02:NC_CK       4464.00   13.075 No_date   39:59   24.61  n/a     .000
                   SUM=     1.0 01:S_N9       31561.00   84.684 No_date   39:59   26.99  n/a     .000
#
# Sum of hydrographs from Node 9 routed to Node 8
# Section 3
#
R0025:C00046------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->      1.0 02:S_N9       31561.00   84.684 No_date   39:59   26.99  n/a     .000
     [RDT= 1.00] out<-      1.0 01:N8         31561.00   79.245 No_date   39:59   26.99  n/a     .000
      [L/S/n= 2269./ .088/.045]
      {Vmax=  .363:Dmax= 1.743}
#
# Addition of Subwatershed 8 and Hobb's Drain to Node 8
#
R0025:C00047------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                 1.0 02:N8         31561.00   79.245 No_date   39:59   26.99  n/a     .000
                      +     1.0 02:SW_8         131.00    2.266 No_date   28:57   25.20  n/a     .000
                      +     1.0 02:HB_DR       3854.00   15.333 No_date   38:34   27.01  n/a     .000
                   SUM=     1.0 01:S_N8       35546.00   94.597 No_date   39:59   26.99  n/a     .000
#
# Sum of hydrographs from Node 8 routed to Node 7
# Section 4
#
R0025:C00048------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->      1.0 02:S_N8       35546.00   94.597 No_date   39:59   26.99  n/a     .000
     [RDT= 1.00] out<-      1.0 01:N7         35546.00   80.337 No_date   45:08   26.98  n/a     .000
      [L/S/n= 3750./ .053/.070]
      {Vmax=  .226:Dmax= 2.161}
#
# Addition of Subwatershed 7 to Node 7
#
R0025:C00049------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                 1.0 02:N7         35546.00   80.337 No_date   45:08   26.98  n/a     .000
                      +     1.0 02:SW_7        3197.00   11.663 No_date   36:24   21.75  n/a     .000
                   SUM=     1.0 01:S_N7       38743.00   86.331 No_date   44:08   26.55  n/a     .000
R0025:C00050------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD                1.0 01:S_N7       38743.00   86.331 No_date   44:08   26.55  n/a     .000
      fname :H_SN7
      remark:flow at S_N7: N7 + SW_7
# Insertion of a reservoir to simulate the effects of the Richmond Fen.
# Storage area and volumes were estimated from available topo maps.
# Release rate from fen was assumed to be controlled by the downstream
# river cross-section for summer conditions.  It is was assumed that for up to
# 0.75 m of water, the main channel of the river provided the storage.  Above
# this depth, the wetland starts to signigicantly store water.
#
```

```
R0025:C00051------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:S_N7       38743.00   86.331 No_date   44:08   26.55  n/a     .000
                out <=    1.0 01:RES_RF     38743.00   42.032 No_date   60:05   26.55  n/a     .000
     {MxStoUsed=.3671E+03  m3}
R0025:C00052------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:RES_RF     38743.00   42.032 No_date   60:05   26.55  n/a     .000
      fname :H_ResRF
      remark:outflow of Richmond Fen
#
# Sum of hydrographs from Node 7 routed to Node 6
# Section 5
#
R0025:C00053------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:RES_RF     38743.00   42.032 No_date   60:05   26.55  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N6         38743.00   41.826 No_date   61:26   26.55  n/a     .000
      [L/S/n= 3056./ .082/.025]
      {Vmax=  .514:Dmax= 1.120}
#
# Addition of Subwatershed 6 and Van Gaal Drain to Node 6
#
R0025:C00054------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N6         38743.00   41.826 No_date   61:26   26.55  n/a     .000
                  +       1.0 02:SW_6         165.00    1.076 No_date   33:03   27.63  n/a     .000
                  +       1.0 02:VG_DR       1332.00    7.882 No_date   35:14   31.50  n/a     .000
                SUM=      1.0 01:S_N6       40240.01   41.832 No_date   61:20   26.72  n/a     .000
#
# Sum of hydrographs from Node 6 routed to Node 5
# Section 6
#
R0025:C00055------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N6       40240.01   41.832 No_date   61:20   26.72  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N5         40240.01   41.717 No_date   62:14   26.72  n/a     .000
      [L/S/n= 1852./ .054/.035]
      {Vmax=  .444:Dmax= 1.222}
#
# Addition of Subwatershed 5 and Flowing Creek to Node 5
#
R0025:C00056------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N5         40240.01   41.717 No_date   62:14   26.72  n/a     .000
                  +       1.0 02:SW_5         224.00    6.882 No_date   28:45   35.66  n/a     .000
                  +       1.0 02:FL_CK       4945.00   37.664 No_date   33:18   32.85  n/a     .000
                SUM=      1.0 01:S_N5       45409.01   62.634 No_date   34:27   27.43  n/a     .000
#
# Sum of hydrographs from Node 5 routed to Node 5A
# Section 7
#
R0025:C00057------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N5       45409.01   62.634 No_date   34:27   27.43  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N5A        45409.01   62.487 No_date   34:43   27.43  n/a     .000
      [L/S/n=  556./ .090/.040]
      {Vmax=  .511:Dmax= 1.222}
#
# Addition of Subwatershed 5A1 and Subwatershed 5A2 to Node 5A
#
R0025:C00058------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N5A        45409.01   62.487 No_date   34:43   27.43  n/a     .000
                  +       1.0 02:SW_5A2        20.00     .798 No_date   28:35   39.36  n/a     .000
                  +       1.0 02:SW_5A1      1412.00    7.480 No_date   37:50   34.24  n/a     .000
                SUM=      1.0 01:S_N5A      46841.01   69.334 No_date   35:01   27.64  n/a     .000
#
# Sum of hydrographs from Node 5A routed to Node 4
# Section 8
#
R0025:C00059------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N5A      46841.01   69.334 No_date   35:01   27.64  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N4         46841.01   66.496 No_date   36:27   27.64  n/a     .000
      [L/S/n= 4630./ .043/.035]
      {Vmax=  .840:Dmax= 3.530}
#
# Addition of Subwatershed 4 and Leamy Creek to Node 4
#
R0025:C00060------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N4         46841.01   66.496 No_date   36:27   27.64  n/a     .000
                  +       1.0 02:SW_4         585.00   10.942 No_date   29:56   39.36  n/a     .000
                  +       1.0 02:LM_CK       1021.00   14.476 No_date   30:46   38.60  n/a     .000
                SUM=      1.0 01:S_N4       48447.00   73.819 No_date   35:41   28.02  n/a     .000
R0025:C00061------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:S_N4       48447.00   73.819 No_date   35:41   28.02  n/a     .000
      fname :S_N4.0025
      remark:flow at S_N4
#
# Sum of hydrographs from Node 4 routed to Node 2
# Section 9
#
R0025:C00062------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N4       48447.00   73.819 No_date   35:41   28.02  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N2         48447.00   73.485 No_date   35:42   28.02  n/a     .000
      [L/S/n= 1667./ .060/.040]
      {Vmax=  .874:Dmax= 3.570}
#
# Addition of Subwatershed 2 with Monohan Drain and Smith Drain to Node 2
#
R0025:C00063------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N2         48447.00   73.485 No_date   35:42   28.02  n/a     .000
                  +       1.0 02:SW_2         177.00    5.438 No_date   28:45   35.66  n/a     .000
                  +       1.0 02:SM_DR       1122.00   13.229 No_date   31:45   39.36  n/a     .000
                  +       1.0 02:MO_DR       2737.00   29.508 No_date   31:30   34.94  n/a     .000
                SUM=      1.0 01:S_N2       52483.00  106.109 No_date   33:07   28.64  n/a     .000
R0025:C00064------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:S_N2       52483.00  106.109 No_date   33:07   28.64  n/a     .000
      fname :H_SN2
      remark:flow at S_N2 Jock River Gauge at Moodie Dr.
#
# Sum of hydrographs from Node 2 routed to Node 1
# Section 10
#
#******************************************************************************
#
# Hydrograph from Node 2 routed to Node 416
# Channel X-Section obtained from RVCA Hydraulic Model - Station 9025
#
R0025:C00065------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N2       52483.00  106.109 No_date   33:07   28.64  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N_416      52483.00  103.234 No_date   34:03   28.64  n/a     .000
      [L/S/n= 2327./ .050/.055]
      {Vmax=  .754:Dmax= 3.305}
#******************************************************************************
#    Catchment SW-1a
#    - Portion of RVCA catchment SW_1 outside of Reach 1 subwatershed
#    - Undeveloped agricultural land
#******************************************************************************
R0025:C00066------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_1a        536.42    5.154 No_date   31:16   30.13 .405     .000
      [CN= 72.0: N= 3.00: Tp= 2.79]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
R0025:C00067------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:S-1-Okeefe    44.93    1.029 No_date   29:07   34.14 .459     .000
      [CN= 77.0: N= 3.00: Tp= 1.05]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0025:C00068------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N_416      52483.00  103.234 No_date   34:03   28.64  n/a     .000
                  +       1.0 02:SW_1a        536.42    5.154 No_date   31:16   30.13  n/a     .000
                  +       1.0 02:S-1-Okeefe    44.93    1.029 No_date   29:07   34.14  n/a     .000
                SUM=      1.0 01:SN_416     53064.36  107.224 No_date   33:26   28.66  n/a     .000
R0025:C00069------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_416     53064.36  107.224 No_date   33:26   28.66  n/a     .000
      fname :SN_416.0025
      remark:Total Flows at Highway 416
#
# Hydrograph from Node 416 routed to Node at Okeefe drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 7245
#
R0025:C00070------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_416     53064.36  107.224 No_date   33:26   28.66  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N_OK       53064.36  107.100 No_date   33:50   28.66  n/a     .000
      [L/S/n=  497./ .302/.055]
      {Vmax= 1.568:Dmax= 2.811}
#******************************************************************************
#    Catchment OKEEFE
#    - To O'Keefe drain (north of the Jock)
#    - Developed with assumed 43% imp.
#    - 2020-12-01 add Okeefe model (Area 513.02 HA) instead of current Okeefe (Area 513.02 HA)
#    - 2020-11-20 Okeefe detailed model was added as per the NOVATECH SWMHYMO model (Citi-Gate 2014).
#******************************************************************************
R0025:C00071------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:O-1           63.72     .937 No_date   28:58   22.21 .299     .000
      [CN= 61.0: N= 3.00: Tp=  .90]
      [IaREC= 4.00: SMIN= 64.50: SMAX=430.01: SK= .010]
      [InterEventTime=  12.00]
R0025:C00072------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:O-1           63.72     .937 No_date   28:58   22.21  n/a     .000
     [RDT= 1.00] out<-    1.0 01:O-1R          63.72     .877 No_date   29:15   22.21  n/a     .000
      [L/S/n=  960./ .630/.043]
      {Vmax=  .829:Dmax=  .398}
R0025:C00073------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:O-2           28.61     .330 No_date   29:13   20.55 .276     .000
      [CN= 57.0: N= 3.00: Tp= 1.10]
      [IaREC= 4.00: SMIN= 76.32: SMAX=508.81: SK= .010]
      [InterEventTime=  12.00]
R0025:C00074------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:O-4           46.94     .426 No_date   29:00   15.62 .210     .000
      [CN= 49.0: N= 3.00: Tp=  .90]
      [IaREC= 4.00: SMIN=104.59: SMAX=697.25: SK= .010]
      [InterEventTime=  12.00]
R0025:C00075------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:O-1R          63.72     .877 No_date   29:15   22.21  n/a     .000
                  +       1.0 02:O-2           28.61     .330 No_date   29:13   20.55  n/a     .000
                  +       1.0 02:O-4           46.94     .426 No_date   29:00   15.62  n/a     .000
                SUM=      1.0 01:OKF-N        139.27    1.623 No_date   29:11   19.65  n/a     .000
R0025:C00076------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:OKF-N        139.27    1.623 No_date   29:11   19.65  n/a     .000
     [RDT= 1.00] out<-    1.0 01:OKF-NR       139.27    1.620 No_date   29:14   19.65  n/a     .000
      [L/S/n=  210./ .810/.043]
      {Vmax=  .998:Dmax=  .685}
R0025:C00077------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:O-6           16.46     .143 No_date   28:45   13.49 .181     .000
      [CN= 43.0: N= 3.00: Tp=  .70]
      [IaREC= 4.00: SMIN=134.47: SMAX=896.47: SK= .010]
      [InterEventTime=  12.00]
R0025:C00078------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:O-3           39.67    1.013 No_date   28:23   24.45 .329     .000
      [XIMP=.15:TIMP=.30]
      [LOSS= 2 :CN= 50.0]
      [Pervious     area: IAper= 4.67:SLPP= .32:LGP= 440.:MNP=.035:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .32:LGI=1880.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 99.77: SMAX=665.12: SK= .010]
R0025:C00079------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:O-5           60.63    2.500 No_date   28:10   28.05 .377     .000
      [XIMP=.13:TIMP=.26]
      [LOSS= 2 :CN= 61.0]
      [Pervious     area: IAper= 4.67:SLPP=1.38:LGP= 550.:MNP=.035:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.38:LGI=1450.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 64.50: SMAX=430.01: SK= .010]
R0025:C00080------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:OKF-NR       139.27    1.620 No_date   29:14   19.65  n/a     .000
                  +       1.0 02:O-3           39.67    1.013 No_date   28:23   24.45  n/a     .000
                  +       1.0 02:O-5           60.63    2.500 No_date   28:10   28.05  n/a     .000
                  +       1.0 02:O-6           16.46     .143 No_date   28:45   13.49  n/a     .000
                SUM=      1.0 01:PT1          256.03    4.071 No_date   28:22   21.98  n/a     .000
R0025:C00081------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:O-7            5.28     .078 No_date   28:37   18.08 .243     .000
      [CN= 54.0: N= 3.00: Tp=  .60]
      [IaREC= 4.00: SMIN= 87.01: SMAX=580.07: SK= .010]
      [InterEventTime=  12.00]
R0025:C00082------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:PT1          256.03    4.071 No_date   28:22   21.98  n/a     .000
                  +       1.0 02:O-7            5.28     .078 No_date   28:37   18.08  n/a     .000
                SUM=      1.0 01:FF           261.31    4.141 No_date   28:22   21.91  n/a     .000
R0025:C00083------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:FF           261.31    4.141 No_date   28:22   21.91  n/a     .000
     [RDT= 1.00] out<-    1.0 01:DRAIN1       261.31    4.014 No_date   28:28   21.91  n/a     .000
      [L/S/n=  302./1.000/.043]
      {Vmax=  .793:Dmax=  .719}
R0025:C00084------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:D1             1.17     .078 No_date   28:12   37.38 .502     .000
      [CN= 84.0: N= 3.00: Tp=  .28]
      [IaREC= 4.00: SMIN= 21.09: SMAX=140.62: SK= .010]
      [InterEventTime=  12.00]
R0025:C00085------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A1             2.50     .464 No_date   28:01   58.43 .785     .000
      [XIMP=.68:TIMP=.85]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 224.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00086------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:A1             2.50     .464 No_date   28:01   58.43  n/a     .000
                out <=    1.0 01:A1-STR         2.50     .117 No_date   28:22   58.43  n/a     .000
           overflow <=    1.0 03:A1-OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.6660E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00087------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:ST-2            .59     .091 No_date   28:00   45.54 .612     .000
      [XIMP=.46:TIMP=.57]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 109.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00088------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:ST-2            .59     .091 No_date   28:00   45.54  n/a     .000
                out <=    1.0 01:ST2STR          .59     .052 No_date   28:07   45.54  n/a     .000
           overflow <=    1.0 03:ST2OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.2899E-02  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00089------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:O-8           60.55    1.147 No_date   29:04   28.63 .385     .000
      [CN= 69.0: N= 3.00: Tp= 1.00]
      [IaREC= 4.00: SMIN= 44.82: SMAX=298.82: SK= .010]
      [InterEventTime=  12.00]
R0025:C00090------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:O-8           60.55    1.147 No_date   29:04   28.63  n/a     .000
     [RDT= 1.00] out<-    1.0 01:O8PIPE        60.55    1.141 No_date   29:08   28.63  n/a     .000
      [L/S/n=  335./ .100/.013]
      {Vmax= 1.178:Dmax=  .540}
      {HGTH= 1.20:WDTH= 1.80}
R0025:C00091------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:DRAIN1       261.31    4.014 No_date   28:28   21.91  n/a     .000
                  +       1.0 02:D1             1.17     .078 No_date   28:12   37.38  n/a     .000
                  +       1.0 02:A1-STR         2.50     .117 No_date   28:22   58.43  n/a     .000
                  +       1.0 02:A1-OVF          .00     .000 No_date    0:00     .00  n/a     .000
                  +       1.0 02:ST2STR          .59     .052 No_date   28:07   45.54  n/a     .000
                  +       1.0 02:ST2OVF          .00     .000 No_date    0:00     .00  n/a     .000
                  +       1.0 02:O8PIPE        60.55    1.141 No_date   29:08   28.63  n/a     .000
                SUM=      1.0 01:ST2-IN       326.12    5.017 No_date   28:36   23.53  n/a     .000
R0025:C00092------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A7             3.51     .635 No_date   28:01   58.43 .785     .000
      [XIMP=.68:TIMP=.85]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 265.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00093------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:A7             3.51     .635 No_date   28:01   58.43  n/a     .000
                out <=    1.0 01:A7-STR         3.51     .164 No_date   28:23   58.43  n/a     .000
           overflow <=    1.0 03:A7-OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.9358E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00094------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:ST-3            .71     .108 No_date   28:00   45.54 .612     .000
      [XIMP=.46:TIMP=.57]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 119.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00095------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:ST-3            .71     .108 No_date   28:00   45.54  n/a     .000
                out <=    1.0 01:ST3STR          .71     .063 No_date   28:08   45.54  n/a     .000
           overflow <=    1.0 03:ST3OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.3355E-02  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00096------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:ST2-IN       326.12    5.017 No_date   28:36   23.53  n/a     .000
                  +       1.0 02:A7-STR         3.51     .164 No_date   28:23   58.43  n/a     .000
                  +       1.0 02:A7-OVF          .00     .000 No_date    0:00     .00  n/a     .000
                  +       1.0 02:ST3STR          .71     .063 No_date   28:08   45.54  n/a     .000
                  +       1.0 02:ST3OVF          .00     .000 No_date    0:00     .00  n/a     .000
                SUM=      1.0 01:PT2ST3       330.34    5.204 No_date   28:28   23.95  n/a     .000
R0025:C00097------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:PT2ST3       330.34    5.204 No_date   28:28   23.95  n/a     .000
     [RDT= 1.00] out<-    1.0 01:DRAIN2       330.34    4.806 No_date   29:00   23.95  n/a     .000
      [L/S/n=  592./ .230/.043]
      {Vmax=  .581:Dmax= 1.088}
R0025:C00098------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:D2             2.28     .062 No_date   29:03   37.38 .502     .000
      [CN= 84.0: N= 3.00: Tp=  .99]
      [IaREC= 4.00: SMIN= 21.09: SMAX=140.62: SK= .010]
      [InterEventTime=  12.00]
R0025:C00099------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A17           12.04    1.933 No_date   28:03   58.43 .785     .000
      [XIMP=.68:TIMP=.85]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 491.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00100------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:A17           12.04    1.933 No_date   28:03   58.43  n/a     .000
                out <=    1.0 01:A17STR        12.04     .553 No_date   28:29   58.43  n/a     .000
           overflow <=    1.0 03:A17OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.3155E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00101------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:ST-4            .35     .055 No_date   28:00   45.54 .612     .000
      [XIMP=.46:TIMP=.57]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=  84.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00102------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:ST-4            .35     .055 No_date   28:00   45.54  n/a     .000
                out <=    1.0 01:ST4STR          .35     .031 No_date   28:07   45.54  n/a     .000
           overflow <=    1.0 03:ST4OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.2092E-02  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00103------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A18            5.30     .922 No_date   28:02   58.43 .785     .000
      [XIMP=.68:TIMP=.85]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 326.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00104------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:A18            5.30     .922 No_date   28:02   58.43  n/a     .000
                out <=    1.0 01:A18STR         5.30     .247 No_date   28:25   58.43  n/a     .000
           overflow <=    1.0 03:A18OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.1408E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00105------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:DRAIN2       330.34    4.806 No_date   29:00   23.95  n/a     .000
                  +       1.0 02:D2             2.28     .062 No_date   29:03   37.38  n/a     .000
                  +       1.0 02:A17STR        12.04     .553 No_date   28:29   58.43  n/a     .000
                  +       1.0 02:A17OVF          .00     .000 No_date    0:00     .00  n/a     .000
                  +       1.0 02:ST4STR          .35     .031 No_date   28:07   45.54  n/a     .000
                  +       1.0 02:ST4OVF          .00     .000 No_date    0:00     .00  n/a     .000
                  +       1.0 02:A18STR         5.30     .247 No_date   28:25   58.43  n/a     .000
                  +       1.0 02:A18OVF          .00     .000 No_date    0:00     .00  n/a     .000
                SUM=      1.0 01:PT3ST4       350.31    5.557 No_date   28:56   25.77  n/a     .000
R0025:C00106------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:PT3ST4       350.31    5.557 No_date   28:56   25.77  n/a     .000
     [RDT= 1.00] out<-    1.0 01:DRAIN3       350.31    5.293 No_date   29:13   25.77  n/a     .000
      [L/S/n=  525./ .230/.043]
      {Vmax=  .603:Dmax= 1.137}
R0025:C00107------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:D3             2.51     .095 No_date   28:43   40.67 .547     .000
      [CN= 86.0: N= 3.00: Tp=  .73]
      [IaREC= 4.00: SMIN= 17.43: SMAX=116.21: SK= .010]
      [InterEventTime=  12.00]
R0025:C00108------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
```

```
     CONTINUOUS STANDHYD   1.0 01:C1              3.41     .618 No_date   28:01   58.43 .785      .000
       [XIMP=.68:TIMP=.85]
       [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
       [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 261.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00109------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE RESERVOIR ->    1.0 02:C1              3.41     .618 No_date   28:01   58.43  n/a      .000
                 out <=    1.0 01:C1-STR          3.41     .159 No_date   28:23   58.43  n/a      .000
            overflow <=    1.0 03:C1-OVF           .00     .000 No_date    0:00     .00  n/a      .000
      {MxStoUsed=.9080E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00110------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:ST-5             .45     .071 No_date   28:00   45.54 .612      .000
       [XIMP=.46:TIMP=.57]
       [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
       [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=  95.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00111------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE RESERVOIR ->    1.0 02:ST-5             .45     .071 No_date   28:00   45.54  n/a      .000
                 out <=    1.0 01:ST5STR           .45     .040 No_date   28:07   45.54  n/a      .000
            overflow <=    1.0 03:ST5OVF           .00     .000 No_date    0:00     .00  n/a      .000
      {MxStoUsed=.2455E-02  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00112------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:DRAIN3        350.31    5.293 No_date   29:13   25.77  n/a      .000
                     +     1.0 02:D3              2.51     .095 No_date   28:43   40.67  n/a      .000
                     +     1.0 02:C1-STR          3.41     .159 No_date   28:23   58.43  n/a      .000
                     +     1.0 02:C1-OVF           .00     .000 No_date    0:00     .00  n/a      .000
                     +     1.0 02:ST5STR           .45     .040 No_date   28:07   45.54  n/a      .000
                     +     1.0 02:ST5OVF           .00     .000 No_date    0:00     .00  n/a      .000
                  SUM=     1.0 01:ST5-E         356.68    5.480 No_date   29:11   26.21  n/a      .000
R0025:C00113------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:STRAND          7.59     .918 No_date   28:10   57.02 .767      .000
       [XIMP=.64:TIMP=.85]
       [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
       [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1230.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00114------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE RESERVOIR ->    1.0 02:STRAND          7.59     .918 No_date   28:10   57.02  n/a      .000
                 out <=    1.0 01:S-POND          7.59     .109 No_date   29:19   57.02  n/a      .000
            overflow <=    1.0 03:S-OVF            .00     .000 No_date    0:00     .00  n/a      .000
      {MxStoUsed=.2915E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00115------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:ST5-E         356.68    5.480 No_date   29:11   26.21  n/a      .000
                     +     1.0 02:S-POND          7.59     .109 No_date   29:19   57.02  n/a      .000
                     +     1.0 02:S-OVF            .00     .000 No_date    0:00     .00  n/a      .000
                  SUM=     1.0 01:SSAOUT        364.27    5.589 No_date   29:11   26.85  n/a      .000
R0025:C00116------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     SAVE HYD              1.0 01:SSAOUT        364.27    5.589 No_date   29:11   26.85  n/a      .000
       fname :SSAOUT.0025
       remark:SSAOUT
R0025:C00117------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:Area-A         66.75    7.879 No_date   28:09   56.06 .754      .000
       [XIMP=.64:TIMP=.80]
       [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
       [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1155.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00118------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     SAVE HYD              1.0 01:Area-A         66.75    7.879 No_date   28:09   56.06  n/a      .000
       fname :Area-A.0025
       remark:SMWF-A Inflow
R0025:C00119------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE RESERVOIR ->    1.0 02:Area-A         66.75    7.879 No_date   28:09   56.06  n/a      .000
                 out <=    1.0 01:SWMF-A         66.75     .788 No_date   29:28   56.05  n/a      .000
            overflow <=    1.0 03:SWMAOV           .00     .000 No_date    0:00     .00  n/a      .000
      {MxStoUsed=.2643E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00120------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     SAVE HYD              1.0 01:SWMF-A         66.75     .788 No_date   29:28   56.05  n/a      .000
       fname :SWMF-A.0025
       remark:SMWF-A Outflow
R0025:C00121------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:SSAOUT        364.27    5.589 No_date   29:11   26.85  n/a      .000
                     +     1.0 02:SWMF-A         66.75     .788 No_date   29:28   56.05  n/a      .000
                     +     1.0 02:SWMAOV           .00     .000 No_date    0:00     .00  n/a      .000
                  SUM=     1.0 01:PT4ST5        431.02    6.356 No_date   29:13   31.37  n/a      .000
R0025:C00122------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:C6              1.87     .354 No_date   28:01   58.43 .785      .000
       [XIMP=.68:TIMP=.85]
       [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
       [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 193.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00123------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE RESERVOIR ->    1.0 02:C6              1.87     .354 No_date   28:01   58.43  n/a      .000
                 out <=    1.0 01:C6-STR          1.87     .089 No_date   28:21   58.43  n/a      .000
            overflow <=    1.0 03:C6-OVF           .00     .000 No_date    0:00     .00  n/a      .000
      {MxStoUsed=.5013E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00124------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:C7              1.62     .309 No_date   28:01   58.43 .785      .000
       [XIMP=.68:TIMP=.85]
       [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
       [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 180.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00125------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE RESERVOIR ->    1.0 02:C7              1.62     .309 No_date   28:01   58.43  n/a      .000
                 out <=    1.0 01:C7-STR          1.62     .077 No_date   28:21   58.43  n/a      .000
            overflow <=    1.0 03:C7-OVF           .00     .000 No_date    0:00     .00  n/a      .000
      {MxStoUsed=.4331E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00126------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:ST-6             .41     .065 No_date   28:00   45.54 .612      .000
       [XIMP=.46:TIMP=.57]
       [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
       [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=  91.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00127------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE RESERVOIR ->    1.0 02:ST-6             .41     .065 No_date   28:00   45.54  n/a      .000
                 out <=    1.0 01:ST6STR           .41     .036 No_date   28:07   45.54  n/a      .000
            overflow <=    1.0 03:ST6OVF           .00     .000 No_date    0:00     .00  n/a      .000
      {MxStoUsed=.2350E-02  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00128------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:PT4ST5        431.02    6.356 No_date   29:13   31.37  n/a      .000
                     +     1.0 02:C6-STR          1.87     .089 No_date   28:21   58.43  n/a      .000
                     +     1.0 02:C6-OVF           .00     .000 No_date    0:00     .00  n/a      .000
                     +     1.0 02:C7-STR          1.62     .077 No_date   28:21   58.43  n/a      .000
                     +     1.0 02:C7-OVF           .00     .000 No_date    0:00     .00  n/a      .000
                     +     1.0 02:ST6STR           .41     .036 No_date   28:07   45.54  n/a      .000
                     +     1.0 02:ST6OVF           .00     .000 No_date    0:00     .00  n/a      .000
                  SUM=     1.0 01:PT5ST6        434.92    6.464 No_date   29:12   31.60  n/a      .000
R0025:C00129------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE CHANNEL   ->    1.0 02:PT5ST6        434.92    6.464 No_date   29:12   31.60  n/a      .000
      [RDT= 1.00] out<-    1.0 01:DRAIN4        434.92    6.229 No_date   29:21   31.60  n/a      .000
       [L/S/n=  324./ .100/.043]
       {Vmax=  .475:Dmax= 1.440}
R0025:C00130------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS NASHYD     1.0 01:D4              1.73     .082 No_date   28:34   43.34 .583      .000
       [CN= 88.0: N= 3.00: Tp=  .60]
       [IaREC= 4.00: SMIN= 14.94: SMAX= 99.61: SK= .010]
       [InterEventTime=  12.00]
R0025:C00131------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:Area-B         24.04    3.916 No_date   28:03   54.85 .737      .000
       [XIMP=.62:TIMP=.77]
       [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
       [Pervious     area: IAper= 4.67:SLPP=1.40:LGP=  50.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI=1.40:LGI= 693.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00132------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE RESERVOIR ->    1.0 02:Area-B         24.04    3.916 No_date   28:03   54.85  n/a      .000
                 out <=    1.0 01:SWMF-B         24.04     .492 No_date   28:44   54.85  n/a      .000
            overflow <=    1.0 03:SWMBOVF          .00     .000 No_date    0:00     .00  n/a      .000
      {MxStoUsed=.8178E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00133------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:DRAIN4        434.92    6.229 No_date   29:21   31.60  n/a      .000
                     +     1.0 02:D4              1.73     .082 No_date   28:34   43.34  n/a      .000
                     +     1.0 02:SWMF-B         24.04     .492 No_date   28:44   54.85  n/a      .000
                     +     1.0 02:SWMBOVF          .00     .000 No_date    0:00     .00  n/a      .000
                  SUM=     1.0 01:D4-EX         460.69    6.717 No_date   29:21   32.86  n/a      .000
R0025:C00134------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE CHANNEL   ->    1.0 02:D4-EX         460.69    6.717 No_date   29:21   32.86  n/a      .000
      [RDT= 1.00] out<-    1.0 01:DRAIN5        460.69    6.598 No_date   29:35   32.86  n/a      .000
       [L/S/n=  413./ .160/.033]
       {Vmax=  .641:Dmax=  .984}
R0025:C00135------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS NASHYD     1.0 01:D5              1.90     .075 No_date   28:41   40.67 .547      .000
       [CN= 86.0: N= 3.00: Tp=  .69]
       [IaREC= 4.00: SMIN= 17.43: SMAX=116.21: SK= .010]
       [InterEventTime=  12.00]
R0025:C00136------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS NASHYD     1.0 01:O-13SDF         9.74     .487 No_date   28:22   38.23 .514      .000
       [CN= 81.0: N= 3.00: Tp=  .43]
       [IaREC= 4.00: SMIN= 25.21: SMAX=168.09: SK= .010]
       [InterEventTime=  12.00]
R0025:C00137------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE RESERVOIR ->    1.0 02:O-13SDF         9.74     .487 No_date   28:22   38.23  n/a      .000
                 out <=    1.0 01:SDF             9.74     .052 No_date   31:01   38.23  n/a      .000
            overflow <=    1.0 03:OVFSDF           .00     .000 No_date    0:00     .00  n/a      .000
      {MxStoUsed=.2061E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00138------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:DRAIN5        460.69    6.598 No_date   29:35   32.86  n/a      .000
                     +     1.0 02:D5              1.90     .075 No_date   28:41   40.67  n/a      .000
                     +     1.0 02:SDF             9.74     .052 No_date   31:01   38.23  n/a      .000
                  SUM=     1.0 01:PT6MC         472.33    6.689 No_date   29:35   33.00  n/a      .000
R0025:C00139------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS NASHYD     1.0 01:O-15           10.67     .668 No_date   28:13   37.06 .498      .000
       [CN= 82.0: N= 3.00: Tp=  .30]
       [IaREC= 4.00: SMIN= 23.09: SMAX=153.94: SK= .010]
       [InterEventTime=  12.00]
R0025:C00140------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:PT6MC         472.33    6.689 No_date   29:35   33.00  n/a      .000
                     +     1.0 02:O-15           10.67     .668 No_date   28:13   37.06  n/a      .000
                  SUM=     1.0 01:M-C           483.00    6.790 No_date   29:34   33.09  n/a      .000
R0025:C00141------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE CHANNEL   ->    1.0 02:M-C           483.00    6.790 No_date   29:34   33.09  n/a      .000
      [RDT= 1.00] out<-    1.0 01:O-14Ch        483.00    6.173 No_date   30:10   33.09  n/a      .000
       [L/S/n=  845./ .100/.033]
       {Vmax=  .552:Dmax= 1.692}
R0025:C00142------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS NASHYD     1.0 01:O-14            5.00     .516 No_date   28:04   37.06 .498      .000
       [CN= 82.0: N= 3.00: Tp=  .13]
       [IaREC= 4.00: SMIN= 23.09: SMAX=153.94: SK= .010]
       [InterEventTime=  12.00]
R0025:C00143------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:O-14Ch        483.00    6.173 No_date   30:10   33.09  n/a      .000
                     +     1.0 02:O-14            5.00     .516 No_date   28:04   37.06  n/a      .000
                  SUM=     1.0 01:OKEEFE        488.00    6.203 No_date   30:09   33.13  n/a      .000
#*****************************************************************************
#    Okeefe Pond
#    - Rating curve obtained assuming 40m3/ha in 24 hours for quality control
#      and a ratio of the catchment area to the West Clarke pond rating curve
#      from the MSS for the next coordinates
#*****************************************************************************
R0025:C00144------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS NASHYD     1.0 01:S-1-D2         18.67     .408 No_date   29:12   34.14 .459      .000
       [CN= 77.0: N= 3.00: Tp= 1.12]
       [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
       [InterEventTime=  12.00]
R0025:C00145------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS NASHYD     1.0 01:S-1-D3          6.79     .134 No_date   29:24   34.14 .459      .000
       [CN= 77.0: N= 3.00: Tp= 1.28]
       [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
       [InterEventTime=  12.00]
R0025:C00146------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:N_OK        53064.36  107.100 No_date   33:50   28.66  n/a      .000
                     +     1.0 02:OKEEFE        488.00    6.203 No_date   30:09   33.13  n/a      .000
                     +     1.0 02:S-1-D2         18.67     .408 No_date   29:12   34.14  n/a      .000
                     +     1.0 02:S-1-D3          6.79     .134 No_date   29:24   34.14  n/a      .000
                  SUM=     1.0 01:SN_OK       53577.82  109.311 No_date   33:24   28.71  n/a      .000
R0025:C00147------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     SAVE HYD              1.0 01:SN_OK       53577.82  109.311 No_date   33:24   28.71  n/a      .000
       fname :SN_OK.0025
       remark:Total Flows at Okeefe Drain
#
# Hydrograph from Node Okeefe routed to Node at Foster Drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 6215
#
R0025:C00148------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE CHANNEL   ->    1.0 02:SN_OK       53577.82  109.311 No_date   33:24   28.71  n/a      .000
      [RDT= 1.00] out<-    1.0 01:N_FO        53577.82  108.988 No_date   33:24   28.71  n/a      .000
       [L/S/n= 1183./ .076/.035]
       {Vmax= 1.184:Dmax= 3.160}
#*****************************************************************************
#    Catchment FOSTER
#    - To Foster ditch (north of the Jock)
#    - Partially developed (medium density); remaining agricultural
#    - 2020-12-01 JFSA Foster area is 332 as per Foster SWMF Environmental Study Report, CH2MHILL, Aug 2013.
#    - 2020-12-01 decrease Foster drainage area from (373 HA) to (307.98 HA) after increasing Okeefe drainage area to (5
#    - 2021-02-12  update Foster area to 325.44 ha as measured from QGIS
#*****************************************************************************
R0025:C00149------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:FOSTER        325.44   28.008 No_date   28:12   52.35 .704      .000
       [XIMP=.55:TIMP=.55]
       [LOSS= 2 :CN= 74.0]
       [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1473.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 36.67: SMAX=244.49: SK= .010]
#*****************************************************************************
#    Foster Pond
#    - Rating curve obtained assuming 40m3/ha in 24 hours for quality control
#      and a ratio of the catchment area to the West Clarke pond rating curve
#      from the MSS for the next coordinates
#*****************************************************************************
R0025:C00150------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE RESERVOIR ->    1.0 02:FOSTER        325.44   28.008 No_date   28:12   52.35  n/a      .000
                 out <=    1.0 01:P_FOS         325.44    7.246 No_date   29:04   52.35  n/a      .000
            overflow <=    1.0 03:FO-OVF           .00     .000 No_date    0:00     .00  n/a      .000
      {MxStoUsed=.7008E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00151------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:P_FOS         325.44    7.246 No_date   29:04   52.35  n/a      .000
                     +     1.0 02:FO-OVF           .00     .000 No_date    0:00     .00  n/a      .000
                  SUM=     1.0 01:FOSTER-OUT    325.44    7.246 No_date   29:04   52.35  n/a      .000
#*****************************************************************************
R0025:C00152------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:W_CLAR_BRA     73.29    9.076 No_date   28:05   56.82 .764      .000
       [XIMP=.60:TIMP=.65]
       [LOSS= 2 :CN= 77.0]
       [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 699.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 31.15: SMAX=207.66: SK= .010]
R0025:C00153------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE RESERVOIR ->    1.0 02:W_CLAR_BRA     73.29    9.076 No_date   28:05   56.82  n/a      .000
                 out <=    1.0 01:MS_P10         73.29    1.168 No_date   29:06   56.82  n/a      .000
            overflow <=    1.0 03:P10-OVF          .00     .000 No_date    0:00     .00  n/a      .000
      {MxStoUsed=.1685E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00154------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS NASHYD     1.0 01:S-1-FO-D2       4.94     .109 No_date   29:10   34.14 .459      .000
       [CN= 77.0: N= 3.00: Tp= 1.10]
       [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
       [InterEventTime=  12.00]
R0025:C00155------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:FOSTER-OUT    325.44    7.246 No_date   29:04   52.35  n/a      .000
                     +     1.0 02:S-1-FO-D2       4.94     .109 No_date   29:10   34.14  n/a      .000
                  SUM=     1.0 01:980           330.38    7.355 No_date   29:04   52.08  n/a      .000
R0025:C00156------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     SAVE HYD              1.0 01:980           330.38    7.355 No_date   29:04   52.08  n/a      .000
       fname :980.0025
       remark:Total Flows at Station 980 on Foster Drain
#
# Hydrograph from Node Foster SWM (Station 980)to Node at station 520
# Channel X-Section obtained from RVCA Hydraulic Model - Station 980
#
R0025:C00157------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE CHANNEL   ->    1.0 02:980           330.38    7.355 No_date   29:04   52.08  n/a      .000
 *    [RDT= 1.00] out<-    1.0 01:980-out       330.38    7.085 No_date   29:14   52.08  n/a      .000
       [L/S/n=  460./ .043/.035]
       {Vmax=  .641:Dmax= 1.523}
R0025:C00158------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS NASHYD     1.0 01:S-1-FO-D1       5.11     .113 No_date   29:10   34.14 .459      .000
       [CN= 77.0: N= 3.00: Tp= 1.10]
       [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
       [InterEventTime=  12.00]
R0025:C00159------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:980-out       330.38    7.085 No_date   29:14   52.08  n/a      .000
                     +     1.0 02:S-1-FO-D1       5.11     .113 No_date   29:10   34.14  n/a      .000
                  SUM=     1.0 01:520           335.49    7.198 No_date   29:14   51.81  n/a      .000
R0025:C00160------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     SAVE HYD              1.0 01:520           335.49    7.198 No_date   29:14   51.81  n/a      .000
       fname :520.0025
       remark:Total Flows at Sation 520 on Foster Drain
# Hydrograph from Node at Station 520 (Foster Drain) to Node at station 6016 (Jock River)
# Channel X-Section obtained from RVCA Hydraulic Model - Station 520
#
R0025:C00161------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE CHANNEL   ->    1.0 02:520           335.49    7.198 No_date   29:14   51.81  n/a      .000
      [RDT= 1.00] out<-    1.0 01:520-out       335.49    7.146 No_date   29:30   51.81  n/a      .000
       [L/S/n=  860./ .587/.035]
       {Vmax= 1.480:Dmax=  .727}
R0025:C00162------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS NASHYD     1.0 01:S-1-FO-F-D     14.96     .353 No_date   29:04   34.14 .459      .000
       [CN= 77.0: N= 3.00: Tp= 1.01]
       [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
       [InterEventTime=  12.00]
R0025:C00163------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:S-1-D8          5.27     .917 No_date   28:00   57.38 .771      .000
       [XIMP=.65:TIMP=.65]
       [LOSS= 2 :CN= 75.0]
       [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .75:LGI= 187.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 33.81: SMAX=225.43: SK= .010]
R0025:C00164------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS NASHYD     1.0 01:S-1-A          75.88    2.541 No_date   28:36   34.14 .459      .000
       [CN= 77.0: N= 3.00: Tp=  .62]
       [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
       [InterEventTime=  12.00]
R0025:C00165------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS NASHYD     1.0 01:W_CLAR_UND     35.65     .789 No_date   29:10   34.14 .459      .000
       [CN= 77.0: N= 3.00: Tp= 1.10]
       [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
       [InterEventTime=  12.00]
R0025:C00166------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:N_FO        53577.82  108.988 No_date   33:24   28.71  n/a      .000
                     +     1.0 02:520-out       335.49    7.146 No_date   29:30   51.81  n/a      .000
                     +     1.0 02:MS_P10         73.29    1.168 No_date   29:06   56.82  n/a      .000
                     +     1.0 02:P10-OVF          .00     .000 No_date    0:00     .00  n/a      .000
                     +     1.0 02:W_CLAR_UND     35.65     .789 No_date   29:10   34.14  n/a      .000
                     +     1.0 02:S-1-FO-F-D     14.96     .353 No_date   29:04   34.14  n/a      .000
                     +     1.0 02:S-1-D8          5.27     .917 No_date   28:00   57.38  n/a      .000
                     +     1.0 02:S-1-A          75.88    2.541 No_date   28:36   34.14  n/a      .000
                  SUM=     1.0 01:SN_FO       54118.36  113.668 No_date   33:24   28.90  n/a      .000
R0025:C00167------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     SAVE HYD              1.0 01:SN_FO       54118.36  113.668 No_date   33:24   28.90  n/a      .000
       fname :SN_FO.0025
       remark:Total Flows at Foster Drain
# Hydrograph from Node Foster routed to Node at Cedarview Road
# Channel X-Section obtained from RVCA Hydraulic Model - Station 6016
#
R0025:C00168------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE CHANNEL   ->    1.0 02:SN_FO       54118.36  113.668 No_date   33:24   28.90  n/a      .000
 *    [RDT= 1.00] out<-    1.0 01:N_CE        54118.36  113.530 No_date   33:29   28.90  n/a      .000
       [L/S/n=  159./ .082/.035]
       {Vmax= 1.423:Dmax= 3.806}
#*****************************************************************************
#    Catchment S-1
#    - To Jock River (north and south of Jock)
#    - Primarily agricultural fields; portion of sand quarry
#*****************************************************************************
R0025:C00169------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS NASHYD     1.0 01:S-1-B          55.36    2.311 No_date   28:23   34.14 .459      .000
       [CN= 77.0: N= 3.00: Tp=  .45]
```

```
       [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
       [InterEventTime=  12.00]
#    -  JFSA 2021-02-24 change the name from S-1-BCDC to S-1-A and S-1-B. Change their TP values based on the new areas
#    -  JFSA 2021-02-24 "S-1-BCDC-1" and "S-1-BCDC-2" are not existing anymore. "S-1-BCDC-1" is part of "S-1-FO-D2" and
#    -  JFSA 2021-01-19, after adding Greenbank pond, "S-1-BCDC-3" is not existing anymore
R0025:C00170-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS NASHYD     1.0 01:S-1-D1        21.67     .491 No_date   29:08   34.14 .459     .000
       [CN= 77.0: N= 3.00: Tp= 1.07]
       [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
       [InterEventTime=  12.00]
R0025:C00171-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS NASHYD     1.0 01:S-1-D4         3.28     .073 No_date   29:10   34.14 .459     .000
       [CN= 77.0: N= 3.00: Tp= 1.10]
       [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
       [InterEventTime=  12.00]
R0025:C00172-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS NASHYD     1.0 01:S-1-D5        12.84     .284 No_date   29:10   34.14 .459     .000
       [CN= 77.0: N= 3.00: Tp= 1.10]
       [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
       [InterEventTime=  12.00]
R0025:C00173-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS NASHYD     1.0 01:S-1-D6         1.75     .039 No_date   29:10   34.13 .459     .000
       [CN= 77.0: N= 3.00: Tp= 1.10]
       [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
       [InterEventTime=  12.00]
R0025:C00174-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS NASHYD     1.0 01:S-1-D7         2.03     .045 No_date   29:10   34.14 .459     .000
       [CN= 77.0: N= 3.00: Tp= 1.10]
       [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
       [InterEventTime=  12.00]
#    Catchment W_CLAR
#    - To West Clarke Drain (south of the Jock)
#    - Subdivision with 43% imp. as per Barrhaven South MSS
#    - 2020-11-30 update CLARKE Tributary Drainage Area to  = 121 ha based on P598(04)-11
#    - 2020-11-30 split CLARKE Drainage Area to MAJOR and ALL
#*****************************************************************************
R0025:C00175-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:W_CLAR_MJ      1.77     .279 No_date   28:00   52.78 .709     .000
       [XIMP=.46:TIMP=.59]
       [LOSS= 2 :CN= 77.0]
       [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 109.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 31.15: SMAX=207.66: SK= .010]
# 5-Year + 12% Capture
R0025:C00176-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE RESERVOIR ->    1.0 02:W_CLAR_MJ      1.77     .279 No_date   28:00   52.78  n/a     .000
                 out <=    1.0 01:W_CLAR_MJn     1.73     .213 No_date   27:54   52.78  n/a     .000
            overflow <=    1.0 03:W_CLAR_MJj      .04     .062 No_date   28:01   52.78  n/a     .000
      {MxStoUsed=.1173E-03  m3, TotOvfVol=.2205E-02  m3, N-Ovf=    1, TotDurOvf=    0.hrs}
R0025:C00177-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:W_CLAR_ALL   119.40   15.305 No_date   28:04   56.82 .764     .000
       [XIMP=.60:TIMP=.65]
       [LOSS= 2 :CN= 77.0]
       [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 892.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 31.15: SMAX=207.66: SK= .010]
R0025:C00178-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:W_CLAR_ALL   119.40   15.305 No_date   28:04   56.82  n/a     .000
                      +    1.0 02:W_CLAR_MJj      .04     .062 No_date   28:01   52.78  n/a     .000
                  SUM=     1.0 01:W_CLAR       119.44   15.305 No_date   28:04   56.81  n/a     .000
R0025:C00179-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     SAVE HYD              1.0 01:W_CLAR       119.44   15.305 No_date   28:04   56.81  n/a     .000
       fname :W_CLAR.0025
       remark:Total Flows to West Clarke
#*****************************************************************************
#    West Clarke Pond 2
#    - Rating curve obtained from Barrhaven South MSS modeling
#    - Tributary Drainage Area to MSS Pond 2 = 241 ha
#*****************************************************************************
R0025:C00180-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE RESERVOIR ->    1.0 02:W_CLAR       119.44   15.305 No_date   28:04   56.81  n/a     .000
                 out <=    1.0 01:MS_P2        119.44    7.398 No_date   28:20   56.81  n/a     .000
            overflow <=    1.0 03:P2-OVF          .00     .000 No_date    0:00     .00  n/a     .000
      {MxStoUsed=.2962E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
#*****************************************************************************
R0025:C00181-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:N_CE       54118.36  113.530 No_date   33:29   28.90  n/a     .000
                      +    1.0 02:S-1-D4         3.28     .073 No_date   29:10   34.14  n/a     .000
                      +    1.0 02:S-1-D5        12.84     .284 No_date   29:10   34.14  n/a     .000
                      +    1.0 02:MS_P2        119.44    7.398 No_date   28:20   56.81  n/a     .000
                      +    1.0 02:P2-OVF          .00     .000 No_date    0:00     .00  n/a     .000
                  SUM=     1.0 01:SN_CE      54253.92  114.429 No_date   33:29   28.97  n/a     .000
R0025:C00182-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     SAVE HYD              1.0 01:SN_CE      54253.92  114.429 No_date   33:29   28.97  n/a     .000
       fname :SN_CE.0025
       remark:Total Flows before Station 5737 on Jock River
# Channel X-Section obtained from RVCA Hydraulic Model - Station 5737
# JFSA 2021-02-25 add station 5737 before station 5002. Station 5737 was extracted from the HEC-RAS model T:\PROJ\1474-1
# JFSA 2021-03-02  change the slope to 0.1% instead of 0.0175 to stabilize the model
R0025:C00183-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE CHANNEL   ->    1.0 02:SN_CE      54253.92  114.429 No_date   33:29   28.97  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:5737       54253.92  109.763 No_date   35:33   28.97  n/a     .000
       [L/S/n=  270./ .018/.035]
       {Vmax=  .782:Dmax= 4.974}
R0025:C00184-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:5737       54253.92  109.763 No_date   35:33   28.97  n/a     .000
                      +    1.0 02:S-1-D1        21.67     .491 No_date   29:08   34.14  n/a     .000
                      +    1.0 02:S-1-D6         1.75     .039 No_date   29:10   34.13  n/a     .000
                      +    1.0 02:S-1-D7         2.03     .045 No_date   29:10   34.14  n/a     .000
                  SUM=     1.0 01:5002       54279.37  109.841 No_date   35:33   28.97  n/a     .000
R0025:C00185-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     SAVE HYD              1.0 01:5002       54279.37  109.841 No_date   35:33   28.97  n/a     .000
       fname :5002.0025
       remark:Total Flows before Station 5002 on Jock River
# Hydrograph from Node Cedarview Road routed to Node at West Clarke Drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 5002
# JFSA 2021-02-19 Change the slope from 0.01 % (as per Stantec Report 2007) to 0.0255 % so the model will be more stable
# JFSA 2021-02-19 Change to three ROUTE CHANNEL with length 275 m each instead of one with 825 m length so the model wil
# JFSA 2021-02-26 change the length of 5002 route channel from 825 m to 736 m. That is because of adding station 5737 be
R0025:C00186-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE CHANNEL   ->    1.0 02:5002       54279.37  109.841 No_date   35:33   28.97  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:N_WCa      54279.37  109.813 No_date   35:41   28.97  n/a     .000
       [L/S/n=  245./ .095/.035]
       {Vmax= 1.217:Dmax= 2.801}
R0025:C00187-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE CHANNEL   ->    1.0 02:N_WCa      54279.37  109.813 No_date   35:41   28.97  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:N_WCb      54279.37  109.805 No_date   35:46   28.97  n/a     .000
       [L/S/n=  245./ .095/.035]
       {Vmax= 1.217:Dmax= 2.801}
R0025:C00188-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE CHANNEL   ->    1.0 02:N_WCb      54279.37  109.805 No_date   35:46   28.97  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:N_WC       54279.37  109.787 No_date   35:53   28.97  n/a     .000
       [L/S/n=  245./ .095/.035]
       {Vmax= 1.217:Dmax= 2.801}
#*****************************************************************************
# Hydrograph from Node West Clarke routed to Node at Kennedy - Burnett Drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 4534
#
R0025:C00189-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE CHANNEL   ->    1.0 02:N_WC       54279.37  109.787 No_date   35:53   28.97  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:N_KB       54279.37  109.399 No_date   36:10   28.97  n/a     .000
       [L/S/n= 1020./ .050/.035]
       {Vmax= 1.078:Dmax= 3.514}
#*****************************************************************************
#    Catchment KEN_BU
#    - To Kennedy-Burnett SWM Facility
#    - Outlets to Fraser-Clarke drain (north of the Jock)
#    - Medium density residential subdivision
#*****************************************************************************
#*****************************************************************************
#   Existing Kennedy-Burnett SWM Facility
#    - Rating curve obtained from URTKBP
#    - Tributary Drainage Area to Pond = 160 ha
#*****************************************************************************
R0025:C00190-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:KB-01A        40.82    4.186 No_date   28:11   29.35 .395     .000
       [XIMP=.10:TIMP=.40]
       [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
       [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp=  .79:SLPI= .50:LGI= 522.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00191-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     COMPUTE DUALHYD       1.0 01:KB-01A        40.82    4.186 No_date   28:11   29.35  n/a     .000
      Major System   /     1.0 02:KB-01A-MJ       .00     .000 No_date    0:00     .00  n/a     .000
      Minor System   \     1.0 03:KB-01A-MN     40.82    3.600 No_date   28:03   29.50  n/a     .000
       {MjSysSto=.3786E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00192-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:KB-01A-MJ       .00     .000 No_date    0:00     .00  n/a     .000
                      +    1.0 02:KB-01A-MN     40.82    3.600 No_date   28:03   29.50  n/a     .000
                  SUM=     1.0 01:KB-01A-S      40.82    3.600 No_date   28:03   29.50  n/a     .000
R0025:C00193-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:KB-01B        31.10    3.068 No_date   28:07   32.30 .434     .000
       [XIMP=.19:TIMP=.38]
       [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
       [Pervious     area: IAper= 4.67:SLPP= .42:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp=  .79:SLPI= .42:LGI= 455.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00194-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     COMPUTE DUALHYD       1.0 01:KB-01B        31.10    3.068 No_date   28:07   32.30  n/a     .000
      Major System   /     1.0 02:KB-01B-MJ       .00     .000 No_date    0:00     .00  n/a     .000
      Minor System   \     1.0 03:KB-01B-MN     31.10    1.585 No_date   27:55   32.52  n/a     .000
       {MjSysSto=.1849E+04, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00195-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:KB-01B-MJ       .00     .000 No_date    0:00     .00  n/a     .000
                      +    1.0 02:KB-01B-MN     31.10    1.585 No_date   27:55   32.52  n/a     .000
                  SUM=     1.0 01:KB-01B-S      31.10    1.585 No_date   27:55   32.52  n/a     .000
R0025:C00196-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:KB-01C        13.78    1.868 No_date   28:04   33.51 .450     .000
       [XIMP=.20:TIMP=.41]
       [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
       [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp=  .79:SLPI= .50:LGI= 303.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00197-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     COMPUTE DUALHYD       1.0 01:KB-01C        13.78    1.868 No_date   28:04   33.51  n/a     .000
      Major System   /     1.0 02:KB-01C-MJ       .00     .000 No_date    0:00     .00  n/a     .000
      Minor System   \     1.0 03:KB-01C-MN     13.78    1.350 No_date   27:57   33.69  n/a     .000
       {MjSysSto=.3173E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00198-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:KB-01C-MJ       .00     .000 No_date    0:00     .00  n/a     .000
                      +    1.0 02:KB-01C-MN     13.78    1.350 No_date   27:57   33.69  n/a     .000
                  SUM=     1.0 01:KB-01C-S      13.78    1.350 No_date   27:57   33.69  n/a     .000
R0025:C00199-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:KB-03         84.78    9.657 No_date   28:08   32.97 .443     .000
       [XIMP=.20:TIMP=.39]
       [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
       [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp=  .79:SLPI= .63:LGI= 752.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00200-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     COMPUTE DUALHYD       1.0 01:KB-03         84.78    9.657 No_date   28:08   32.97  n/a     .000
      Major System   /     1.0 02:KB-03-MJ        .00     .000 No_date    0:00     .00  n/a     .000
      Minor System   \     1.0 03:KB-03-MN      84.78    5.270 No_date   27:56   33.21  n/a     .000
       {MjSysSto=.4456E+04, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00201-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:KB-03-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                      +    1.0 02:KB-03-MN      84.78    5.270 No_date   27:56   33.21  n/a     .000
                  SUM=     1.0 01:KB-03-S       84.78    5.270 No_date   27:56   33.21  n/a     .000
R0025:C00202-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:KB-04          6.95    1.434 No_date   28:00   65.29 .878     .000
       [XIMP=.85:TIMP=.85]
       [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
       [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp=  .94:SLPI= .50:LGI= 215.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00203-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     COMPUTE DUALHYD       1.0 01:KB-04          6.95    1.434 No_date   28:00   65.29  n/a     .000
      Major System   /     1.0 02:KB-04-MJ        .00     .000 No_date    0:00     .00  n/a     .000
      Minor System   \     1.0 03:KB-04-MN       6.95     .503 No_date   27:45   65.54  n/a     .000
       {MjSysSto=.7689E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00204-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:KB-04-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                      +    1.0 02:KB-04-MN       6.95     .503 No_date   27:45   65.54  n/a     .000
                  SUM=     1.0 01:KB-04-S        6.95     .503 No_date   27:45   65.54  n/a     .000
R0025:C00205-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:KB-05          5.19    1.147 No_date   28:00   69.06 .928     .000
       [XIMP=.93:TIMP=.93]
       [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
       [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 186.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00206-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:KB-06         12.93    2.960 No_date   28:00   66.54 .895     .000
       [XIMP=.87:TIMP=.87]
       [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
       [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp=  .94:SLPI=4.75:LGI= 294.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00207-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     COMPUTE DUALHYD       1.0 01:KB-06         12.93    2.960 No_date   28:00   66.54  n/a     .000
      Major System   /     1.0 02:KB-06-MJ        .00     .000 No_date    0:00     .00  n/a     .000
      Minor System   \     1.0 03:KB-06-MN      12.93    2.262 No_date   28:07   66.58  n/a     .000
       {MjSysSto=.2613E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00208-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:KB-06-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                      +    1.0 02:KB-06-MN      12.93    2.262 No_date   28:07   66.58  n/a     .000
                  SUM=     1.0 01:KB-06-S       12.93    2.262 No_date   28:07   66.58  n/a     .000
R0025:C00209-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:KB-11          4.03     .817 No_date   28:00   55.88 .751     .000
       [XIMP=.68:TIMP=.68]
       [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
       [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp=  .79:SLPI=2.00:LGI= 164.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00210-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     COMPUTE DUALHYD       1.0 01:KB-11          4.03     .817 No_date   28:00   55.88  n/a     .000
      Major System   /     1.0 02:KB-11-MJ        .00     .000 No_date    0:00     .00  n/a     .000
      Minor System   \     1.0 03:KB-11-MN       4.03     .577 No_date   27:53   55.96  n/a     .000
       {MjSysSto=.9558E+02, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00211-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:KB-11-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                      +    1.0 02:KB-11-MN       4.03     .577 No_date   27:53   55.96  n/a     .000
                  SUM=     1.0 01:KB-11-S        4.03     .577 No_date   27:53   55.96  n/a     .000
R0025:C00212-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:S1             4.99    1.184 No_date   28:00   69.06 .928     .000
       [XIMP=.93:TIMP=.93]
       [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
       [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI=2.00:LGI= 182.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00213-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:KB-15          2.15     .447 No_date   28:00   62.65 .842     .000
       [XIMP=.79:TIMP=.79]
       [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
       [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp=  .16:SLPI= .30:LGI= 120.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00214-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:KB-01A-S      40.82    3.600 No_date   28:03   29.50  n/a     .000
                      +    1.0 02:KB-01B-S      31.10    1.585 No_date   27:55   32.52  n/a     .000
                      +    1.0 02:KB-01C-S      13.78    1.350 No_date   27:57   33.69  n/a     .000
                      +    1.0 02:KB-03-S       84.78    5.270 No_date   27:56   33.21  n/a     .000
                      +    1.0 02:KB-04-S        6.95     .503 No_date   27:45   65.54  n/a     .000
                      +    1.0 02:KB-05          5.19    1.147 No_date   28:00   69.06  n/a     .000
                      +    1.0 02:KB-06-S       12.93    2.262 No_date   28:07   66.58  n/a     .000
                      +    1.0 02:KB-11-S        4.03     .577 No_date   27:53   55.96  n/a     .000
                      +    1.0 02:KB-15          2.15     .447 No_date   28:00   62.65  n/a     .000
                      +    1.0 02:S1             4.99    1.184 No_date   28:00   69.06  n/a     .000
                  SUM=     1.0 01:KB-P1        206.72   17.555 No_date   28:01   38.09  n/a     .000
R0025:C00215-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE RESERVOIR ->    1.0 02:KB-P1        206.72   17.555 No_date   28:01   38.09  n/a     .000
                 out <=    1.0 01:KB-P1R       201.26   12.438 No_date   28:05   38.09  n/a     .000
            overflow <=    1.0 03:KB-P1ovf       5.46    4.400 No_date   28:05   38.09  n/a     .000
      {MxStoUsed=.7322E+00  m3, TotOvfVol=.2079E+00  m3, N-Ovf=    1, TotDurOvf=    0.hrs}
R0025:C00216-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:KB-P1R       201.26   12.438 No_date   28:05   38.09  n/a     .000
                      +    1.0 02:KB-P1ovf       5.46    4.400 No_date   28:05   38.09  n/a     .000
                  SUM=     1.0 01:KB-Pond1     206.72   16.838 No_date   28:05   38.09  n/a     .000
R0025:C00217-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     SAVE HYD              1.0 01:KB-Pond1     206.72   16.838 No_date   28:05   38.09  n/a     .000
       fname :KB-Pond1.0025
       remark:Total Flows at KB first pond
R0025:C00218-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:KB-07         10.86    2.392 No_date   28:00   65.97 .887     .000
       [XIMP=.86:TIMP=.86]
       [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
       [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp=  .79:SLPI=2.00:LGI= 269.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00219-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     COMPUTE DUALHYD       1.0 01:KB-07         10.86    2.392 No_date   28:00   65.97  n/a     .000
      Major System   /     1.0 02:KB-07-MJ        .00     .000 No_date    0:00     .00  n/a     .000
      Minor System   \     1.0 03:KB-07-MN      10.86    2.094 No_date   27:56   66.02  n/a     .000
       {MjSysSto=.7523E+02, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00220-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:KB-07-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                      +    1.0 02:KB-07-MN      10.86    2.094 No_date   27:56   66.02  n/a     .000
                  SUM=     1.0 01:KB-07-S       10.86    2.094 No_date   27:56   66.02  n/a     .000
R0025:C00221-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:KB-08          6.61    1.292 No_date   28:00   53.97 .726     .000
       [XIMP=.64:TIMP=.64]
       [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
       [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp=  .79:SLPI=2.00:LGI= 210.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00222-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     COMPUTE DUALHYD       1.0 01:KB-08          6.61    1.292 No_date   28:00   53.97  n/a     .000
      Major System   /     1.0 02:KB-08-MJ        .00     .000 No_date    0:00     .00  n/a     .000
      Minor System   \     1.0 03:KB-08-MN       6.61    1.058 No_date   27:55   54.34  n/a     .000
       {MjSysSto=.6817E+02, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00223-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:KB-08-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                      +    1.0 02:KB-08-MN       6.61    1.058 No_date   27:55   54.34  n/a     .000
                  SUM=     1.0 01:KB-08-S        6.61    1.058 No_date   27:55   54.34  n/a     .000
R0025:C00224-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:KB-09          2.60     .599 No_date   28:00   65.30 .878     .000
       [XIMP=.86:TIMP=.86]
       [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
       [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI=2.00:LGI= 132.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00225-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:KB-10_1        2.37     .550 No_date   28:00   65.30 .878     .000
       [XIMP=.86:TIMP=.86]
       [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
       [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI=2.00:LGI= 126.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00226-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:KB-10_2        1.14     .266 No_date   28:00   65.30 .878     .000
       [XIMP=.86:TIMP=.86]
       [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
       [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI=2.00:LGI=  87.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00227-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:KB-12          4.86    1.059 No_date   28:00   61.90 .832     .000
       [XIMP=.79:TIMP=.79]
       [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
       [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.10:SLPI=2.00:LGI= 180.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00228-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     COMPUTE DUALHYD       1.0 01:KB-12          4.86    1.059 No_date   28:00   61.90  n/a     .000
      Major System   /     1.0 02:KB-12-MJ        .00     .000 No_date    0:00     .00  n/a     .000
      Minor System   \     1.0 03:KB-12-MN       4.86     .867 No_date   27:54   62.20  n/a     .000
       {MjSysSto=.6022E+02, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00229-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:KB-12-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                      +    1.0 02:KB-12-MN       4.86     .867 No_date   27:54   62.20  n/a     .000
                  SUM=     1.0 01:KB-12-S        4.86     .867 No_date   27:54   62.20  n/a     .000
R0025:C00230-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
```

```
    CONTINUOUS STANDHYD   1.0 01:KB-13         10.19    1.930 No_date   28:00   53.97 .726      .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI=2.00:LGI= 261.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00231-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-13         10.19    1.930 No_date   28:00   53.97  n/a      .000
     Major System   /     1.0 02:KB-13-MJ        .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:KB-13-MN      10.19    1.722 No_date   27:57   53.98  n/a      .000
      {MjSysSto=.4703E+02, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00232-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-13-MJ        .00     .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:KB-13-MN      10.19    1.722 No_date   27:57   53.98  n/a      .000
                 SUM=     1.0 01:KB-13-S       10.19    1.722 No_date   27:57   53.98  n/a      .000
R0025:C00233-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-14          5.47    1.075 No_date   28:00   53.97 .726      .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI=2.00:LGI= 191.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00234-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-14          5.47    1.075 No_date   28:00   53.97  n/a      .000
     Major System   /     1.0 02:KB-14-MJ        .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:KB-14-MN       5.47     .873 No_date   27:55   54.32  n/a      .000
      {MjSysSto=.6018E+02, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00235-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-14-MJ        .00     .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:KB-14-MN       5.47     .873 No_date   27:55   54.32  n/a      .000
                 SUM=     1.0 01:KB-14-S        5.47     .873 No_date   27:55   54.32  n/a      .000
R0025:C00236-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-16_2        3.42     .649 No_date   28:01   58.24 .783      .000
      [XIMP=.71:TIMP=.71]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .16:SLPI= .30:LGI= 151.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00237-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-Pond1     206.72   16.838 No_date   28:05   38.09  n/a      .000
                    +     1.0 02:KB-07-S       10.86    2.094 No_date   27:56   66.02  n/a      .000
                    +     1.0 02:KB-08-S        6.61    1.058 No_date   27:55   54.34  n/a      .000
                    +     1.0 02:KB-09          2.60     .599 No_date   28:00   65.30  n/a      .000
                    +     1.0 02:KB-10_1        2.37     .550 No_date   28:00   65.30  n/a      .000
                    +     1.0 02:KB-10_2        1.14     .266 No_date   28:00   65.30  n/a      .000
                    +     1.0 02:KB-12-S        4.86     .867 No_date   27:54   62.20  n/a      .000
                    +     1.0 02:KB-13-S       10.19    1.722 No_date   27:57   53.98  n/a      .000
                    +     1.0 02:KB-14-S        5.47     .873 No_date   27:55   54.32  n/a      .000
                    +     1.0 02:KB-16_2        3.42     .649 No_date   28:01   58.24  n/a      .000
                 SUM=     1.0 01:KB-P2        254.24   24.423 No_date   28:05   42.08  n/a      .000
R0025:C00238-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:KB-P2        254.24   24.423 No_date   28:05   42.08  n/a      .000
                out <=    1.0 01:KB-P2R       254.24   17.126 No_date   28:11   42.08  n/a      .000
           overflow <=    1.0 03:KB-P2ovf        .00     .000 No_date    0:00     .00  n/a      .000
     {MxStoUsed=.9755E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00239-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-P2R       254.24   17.126 No_date   28:11   42.08  n/a      .000
                    +     1.0 02:KB-P2ovf        .00     .000 No_date    0:00     .00  n/a      .000
                 SUM=     1.0 01:KB-Pond2     254.24   17.126 No_date   28:11   42.08  n/a      .000
R0025:C00240-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:KB-Pond2     254.24   17.126 No_date   28:11   42.08  n/a      .000
      fname :KB-Pond2.0025
      remark:Total Flows at KB second pond
R0025:C00241-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-16_1        2.80     .551 No_date   28:01   60.44 .812      .000
      [XIMP=.75:TIMP=.75]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .16:SLPI= .30:LGI= 137.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00242-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-Pond2     254.24   17.126 No_date   28:11   42.08  n/a      .000
                    +     1.0 02:KB-16_1        2.80     .551 No_date   28:01   60.44  n/a      .000
                 SUM=     1.0 01:KB-P3        257.04   17.347 No_date   28:10   42.28  n/a      .000
R0025:C00243-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:KB-P3        257.04   17.347 No_date   28:10   42.28  n/a      .000
                out <=    1.0 01:KB-P3R        10.42     .051 No_date   17:19   42.28  n/a      .000
           overflow <=    1.0 03:KB-P3ovf     246.62   17.293 No_date   28:10   42.28  n/a      .000
     {MxStoUsed=.1993E-02  m3, TotOvfVol=.1043E+02  m3, N-Ovf=    2, TotDurOvf=   23.hrs}
R0025:C00244-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-P3R        10.42     .051 No_date   17:19   42.28  n/a      .000
                    +     1.0 02:KB-P3ovf     246.62   17.293 No_date   28:10   42.28  n/a      .000
                 SUM=     1.0 01:KB-Pond3     257.04   17.344 No_date   28:10   42.28  n/a      .000
R0025:C00245-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:KB-Pond3     257.04   17.344 No_date   28:10   42.28  n/a      .000
      fname :KB-Pond3.0025
      remark:Total Flows at KB third pond
#****************************************************************************
#    EXISTING / PROPOSED Subcatchments (Kennedy-Burnett SWM Facility (118080), SWM Modeling Approach, NOVATECH Report Ju
#    - TO FRASER-CLARKE DRAIN
#****************************************************************************
R0025:C00246-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:FC-01          8.03    1.288 No_date   28:01   44.33 .596      .000
      [XIMP=.47:TIMP=.47]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 231.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00247-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:FC-01          8.03    1.288 No_date   28:01   44.33  n/a      .000
     Major System   /     1.0 02:FC-01-MJ        .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:FC-01-MN       8.03     .756 No_date   28:25   44.53  n/a      .000
      {MjSysSto=.2943E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00248-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:FC-01-MJ        .00     .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:FC-01-MN       8.03     .756 No_date   27:53   44.53  n/a      .000
                 SUM=     1.0 01:FC-01-S        8.03     .756 No_date   27:53   44.53  n/a      .000
R0025:C00249-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:FC-02         16.05    3.458 No_date   28:00   69.06 .928      .000
      [XIMP=.93:TIMP=.93]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 327.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00250-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:FC-02         16.05    3.458 No_date   28:00   69.06  n/a      .000
     Major System   /     1.0 02:FC-02-MJ        .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:FC-02-MN      16.05    1.159 No_date   27:44   69.13  n/a      .000
      {MjSysSto=.1941E+04, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00251-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:FC-02-MJ        .00     .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:FC-02-MN      16.05    1.159 No_date   27:44   69.13  n/a      .000
                 SUM=     1.0 01:FC-02-S       16.05    1.159 No_date   27:44   69.13  n/a      .000
R0025:C00252-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:FC-03          7.37    1.375 No_date   28:00   53.47 .719      .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 222.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00253-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:FC-03          7.37    1.375 No_date   28:00   53.47  n/a      .000
     Major System   /     1.0 02:FC-03-MJ        .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:FC-03-MN       7.37     .358 No_date   27:43   53.66  n/a      .000
      {MjSysSto=.9407E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00254-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:FC-03-MJ        .00     .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:FC-03-MN       7.37     .358 No_date   27:43   53.66  n/a      .000
                 SUM=     1.0 01:FC-03-S        7.37     .358 No_date   27:43   53.66  n/a      .000
R0025:C00255-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:FC-04         12.87    2.308 No_date   28:01   53.47 .719      .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 293.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00256-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:FC-04         12.87    2.308 No_date   28:01   53.47  n/a      .000
     Major System   /     1.0 02:FC-04-MJ        .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:FC-04-MN      12.87     .741 No_date   27:45   53.74  n/a      .000
      {MjSysSto=.1387E+04, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00257-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:FC-04-MJ        .00     .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:FC-04-MN      12.87     .741 No_date   27:45   53.74  n/a      .000
                 SUM=     1.0 01:FC-04-S       12.87     .741 No_date   27:45   53.74  n/a      .000
#****************************************************************************
#    PROPOSED Subcatchments (Kennedy-Burnett SWM Facility (118080), SWM Modeling Approach, NOVATECH Report June, 2020)
#    - TO JOCK RIVER
#****************************************************************************
R0025:C00258-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:JR-01          8.24    1.515 No_date   28:00   53.47 .719      .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 234.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00259-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:JR-01          8.24    1.515 No_date   28:00   53.47  n/a      .000
     Major System   /     1.0 02:JR-01-MJ        .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:JR-01-MN       8.24     .563 No_date   28:50   53.74  n/a      .000
      {MjSysSto=.7433E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00260-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:JR-01-MJ        .00     .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:JR-01-MN       8.24     .563 No_date   27:45   53.74  n/a      .000
                 SUM=     1.0 01:JR-01-S        8.24     .563 No_date   27:45   53.74  n/a      .000
R0025:C00261-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:JR-02          1.59     .316 No_date   28:00   53.47 .719      .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 103.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00262-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:JR-02          1.59     .316 No_date   28:00   53.47  n/a      .000
     Major System   /     1.0 02:JR-02-MJ        .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:JR-02-MN       1.59     .153 No_date   27:47   53.69  n/a      .000
      {MjSysSto=.9432E+02, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00263-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:JR-02-MJ        .00     .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:JR-02-MN       1.59     .153 No_date   27:47   53.69  n/a      .000
                 SUM=     1.0 01:JR-02-S        1.59     .153 No_date   27:47   53.69  n/a      .000
#****************************************************************************
#    Catchment FRASER
#    - To Fraser-Clarke drain (north of the Jock)
#    - Developed land with assumed 43% imp.
#    - 2020-12-17 Change Fraser area to be 35.1 as measured from QGIS
#    - 2020-12-17 All Fraser is undeveloped (Nashyd)
#****************************************************************************
R0025:C00264-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:FRASER-DRN    13.65     .594 No_date   28:22   34.14 .459      .000
      [CN= 77.0: N= 3.00: Tp=  .43]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0025:C00265-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:FRASER-D      21.61     .681 No_date   28:40   34.14 .459      .000
      [CN= 77.0: N= 3.00: Tp=  .67]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0025:C00266-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-Pond3     257.04   17.344 No_date   28:10   42.28  n/a      .000
                    +     1.0 02:S-1-B         55.36    2.311 No_date   28:23   34.14  n/a      .000
                    +     1.0 02:FRASER-DRN    13.65     .594 No_date   28:22   34.14  n/a      .000
                    +     1.0 02:FRASER-D      21.61     .681 No_date   28:40   34.14  n/a      .000
                    +     1.0 02:N_KB       54279.37  109.399 No_date   36:10   28.97  n/a      .000
                    +     1.0 02:FC-01-S        8.03     .756 No_date   27:53   44.53  n/a      .000
                    +     1.0 02:FC-02-S       16.05    1.159 No_date   27:44   69.13  n/a      .000
                    +     1.0 02:FC-03-S        7.37     .358 No_date   27:43   53.66  n/a      .000
                 SUM=     1.0 01:4241       54658.48  110.084 No_date   36:06   29.06  n/a      .000
R0025:C00267-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:4241       54658.48  110.084 No_date   36:06   29.06  n/a      .000
      fname :4241.0025
      remark:Total Flows at Ken-Burnett Outlet
# Hydrograph from Node Ken-Burnett to station 3633
# Channel X-Section obtained from RVCA Hydraulic Model - Station 4241
#
R0025:C00268-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:4241       54658.48  110.084 No_date   36:06   29.06  n/a      .000
     [RDT= 1.00] out<-    1.0 01:4241-out   54658.48  110.145 No_date   36:03   29.06  n/a      .000
      [L/S/n=  294./ .109/.035]
      {Vmax= 1.274:Dmax= 2.271}
R0025:C00269-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:4241-out   54658.48  110.145 No_date   36:03   29.06  n/a      .000
                    +     1.0 02:FC-04-S       12.87     .741 No_date   27:45   53.74  n/a      .000
                    +     1.0 02:JR-01-S        8.24     .563 No_date   27:45   53.74  n/a      .000
                    +     1.0 02:JR-02-S        1.59     .153 No_date   27:47   53.69  n/a      .000
                 SUM=     1.0 01:SN_KB      54681.18  110.195 No_date   36:03   29.07  n/a      .000
R0025:C00270-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_KB      54681.18  110.195 No_date   36:03   29.07  n/a      .000
      fname :SN_KB.0025
      remark:HYD_COMMENT=["Total Flows before Station 3633]
# Hydrograph from Station 3633 to Node Todd
# Channel X-Section obtained from RVCA Hydraulic Model - Station 3633
# JFSA 2021-02-26 change the channel length (at station 3633) from 650m to 608m and change the slope from 0.0498% to 0.2
#
R0025:C00271-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_KB      54681.18  110.195 No_date   36:03   29.07  n/a      .000
     [RDT= 1.00] out<-    1.0 01:N_TO       54681.18  110.128 No_date   36:07   29.07  n/a      .000
      [L/S/n=  608./ .247/.035]
      {Vmax= 1.714:Dmax= 1.705}
#****************************************************************************
#    Catchment Greenbank
#    - To Greenbank Drain (south of the Jock)
#    - JFSA 2021-01-18 add Greenbank pond as per JFSA, P598(06)-15, June 2016
#    - JFSA 2021-01-19 update area from 37.479 ha to 36.6 ha based on GIS measurements
#****************************************************************************
R0025:C00272-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:Greenbank     36.60    5.574 No_date   28:02   58.33 .784      .000
      [XIMP=.64:TIMP=.68]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 494.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0025:C00273-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:Greenbank     36.60    5.574 No_date   28:02   58.33  n/a      .000
                out <=    1.0 01:GreenB_MN     36.60    3.118 No_date   28:11   58.33  n/a      .000
           overflow <=    1.0 03:GreenB_MJ       .00     .000 No_date    0:00     .00  n/a      .000
     {MxStoUsed=.8739E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00274-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N_TO       54681.18  110.128 No_date   36:07   29.07  n/a      .000
                    +     1.0 02:GreenB_MJ       .00     .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:GreenB_MN     36.60    3.118 No_date   28:11   58.33  n/a      .000
                 SUM=     1.0 01:GreenB     54717.78  110.282 No_date   36:07   29.09  n/a      .000
R0025:C00275-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:GreenB     54717.78  110.282 No_date   36:07   29.09  n/a      .000
      fname :GreenB.0025
      remark:Total Flows at Greenbank Drain
#****************************************************************************
#    Catchment TODD
#    - To Todd Drain (south of the Jock)
#    - Subdivision with 43% imp. as per Barrhaven South MSS
#    - 2020-11-30 increase imp. based on P598(04)-11
#    - 2020-11-30 update TODD Tributary Drainage Area to  = 146.015 ha based on P598(04)-11
#    - 2020-11-30 split TODD Drainage Area to MAJOR, MINOR, POND and ALL
#****************************************************************************
#    - JFSA 2021-01-19 add "TODD_MN1" as part of Clarke("W_CLAR_MJ") and remove it from Todd
R0025:C00276-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:TODD_MN2       2.10     .339 No_date   28:00   53.59 .720      .000
      [XIMP=.53:TIMP=.57]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 118.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0025:C00277-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:TODD_MN3        .12     .020 No_date   28:00   53.57 .720      .000
      [XIMP=.53:TIMP=.57]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI=  28.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0025:C00278-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:TODD_MJ       30.23    4.269 No_date   28:02   55.13 .741      .000
      [XIMP=.52:TIMP=.64]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 449.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0025:C00279-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:TODD_ALL     112.91   13.312 No_date   28:05   53.38 .718      .000
      [XIMP=.52:TIMP=.57]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 868.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0025:C00280-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:TODD_P         3.06     .535 No_date   28:00   57.01 .766      .000
      [XIMP=.63:TIMP=.63]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 143.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
# 5-Year + 12% Capture
R0025:C00281-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:TODD_MJ       30.23    4.269 No_date   28:02   55.13  n/a      .000
                out <=    1.0 01:TODD_MJn      29.48    3.314 No_date   27:57   55.13  n/a      .000
           overflow <=    1.0 03:TODD_MJj        .75     .946 No_date   28:03   55.13  n/a      .000
     {MxStoUsed=.1175E-03  m3, TotOvfVol=.4153E-01  m3, N-Ovf=    1, TotDurOvf=    0.hrs}
# 5-Year + 12% Capture
R0025:C00282-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:TODD_MN2       2.10     .339 No_date   28:00   53.59  n/a      .000
                out <=    1.0 01:TODD_MN2n      2.06     .268 No_date   27:54   53.60  n/a      .000
           overflow <=    1.0 03:TODD_MN2j       .04     .067 No_date   28:00   53.59  n/a      .000
     {MxStoUsed=.8415E-04  m3, TotOvfVol=.2217E-02  m3, N-Ovf=    1, TotDurOvf=    0.hrs}
R0025:C00283-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:TODD_MN3        .12     .020 No_date   28:00   53.58  n/a      .000
                out <=    1.0 01:TODD_MN3n       .11     .016 No_date   27:53   53.58  n/a      .000
           overflow <=    1.0 03:TODD_MN3j       .00     .004 No_date   28:00   53.58  n/a      .000
     {MxStoUsed=.1067E-03  m3, TotOvfVol=.1192E-03  m3, N-Ovf=    1, TotDurOvf=    0.hrs}
R0025:C00284-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A2            25.50    2.974 No_date   28:03   49.44 .665      .000
      [XIMP=.42:TIMP=.52]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 566.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0025:C00285-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A2            25.50    2.974 No_date   28:03   49.44  n/a      .000
     Major System   /     1.0 02:A2-MJ           .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:A2-MN         25.50    1.818 No_date   27:54   49.64  n/a      .000
      {MjSysSto=.8120E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00286-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:TODD_MN2n      2.06     .268 No_date   27:54   53.60  n/a      .000
                    +     1.0 02:TODD_MN3n       .11     .016 No_date   27:53   53.58  n/a      .000
                    +     1.0 02:TODD_MJj        .75     .946 No_date   28:03   55.13  n/a      .000
                    +     1.0 02:TODD_P         3.06     .535 No_date   28:00   57.01  n/a      .000
                    +     1.0 02:TODD_ALL     112.91   13.312 No_date   28:05   53.38  n/a      .000
                    +     1.0 02:W_CLAR_MJn     1.73     .213 No_date   27:54   52.78  n/a      .000
                 SUM=     1.0 01:TODD         120.62   14.962 No_date   28:03   53.48  n/a      .000
R0025:C00287-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:TODD         120.62   14.962 No_date   28:03   53.48  n/a      .000
      fname :TODD.0025
      remark:Total Flows at Todd Drain
#****************************************************************************
#    Todd Pond 3
#    - Rating curve obtained from Barrhaven South MSS modeling
#    - stantec 2007, Tributary Drainage Area to MSS Pond 3 = 193 ha
#****************************************************************************
R0025:C00288-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
```

```
    ROUTE RESERVOIR ->    1.0 02:TODD         120.62   14.962 No_date   28:03   53.48  n/a     .000
               out <=     1.0 01:MS_P3        120.62    9.717 No_date   28:14   53.48  n/a     .000
          overflow <=     1.0 03:P3-OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.2619E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00289------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:GreenB     54717.78  110.282 No_date   36:07   29.09  n/a     .000
                    +     1.0 02:MS_P3        120.62    9.717 No_date   28:14   53.48  n/a     .000
                    +     1.0 02:P3-OVF          .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:TODD_MN2j       .04     .067 No_date   28:00   53.59  n/a     .000
                    +     1.0 02:A2-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                 SUM=     1.0 01:SN_TO      54838.44  110.670 No_date   36:07   29.14  n/a     .000
R0025:C00290------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_TO      54838.44  110.670 No_date   36:07   29.14  n/a     .000
      fname :SN_TO.0025
      remark:Total Flows at Todd Drain
#
# Hydrograph from Todd Drain routed to Corrigan Drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 2462
# 2021-02-19 Change the slope from 0.033 % (as per Stantec Report 2007) to 0.05 % so the model will be more stable and g
R0025:C00291------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_TO      54838.44  110.670 No_date   36:07   29.14  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:N_TO       54838.44  110.461 No_date   36:21   29.14  n/a     .000
      [L/S/n=  280./ .050/.045]
      {Vmax=  .905:Dmax= 3.255}
R0025:C00292------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:N_TO       54838.44  110.461 No_date   36:21   29.14  n/a     .000
      fname :N_TO.0025
      remark:Total inflows at Station 2462
#****************************************************************************
#    Catchment CORRIG
#    - To Corrigan Drain (south of the Jock)
#    - Primarily Developed (medium density)
#    - JFSA JAN 2021, add Corrigan subcatchments as per IBI, July 2008
#****************************************************************************
R0025:C00293------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:corr1         15.87    2.535 No_date   28:01   57.01 .766     .000
      [XIMP=.63:TIMP=.63]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 325.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0025:C00294------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:corr1         15.87    2.535 No_date   28:01   57.01  n/a     .000
     Major System   /     1.0 02:corr1-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:corr1-MN      15.87    1.818 No_date   28:15   57.37  n/a     .000
      {MjSysSto=.3150E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00295------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:corr2         12.47     .276 No_date   29:10   34.14 .459     .000
      [CN= 77.0: N= 3.00: Tp= 1.10]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0025:C00296------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A1-Corrig     15.75    2.022 No_date   28:01   49.44 .665     .000
      [XIMP=.42:TIMP=.52]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 324.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0025:C00297------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A1-Corrig     15.75    2.022 No_date   28:01   49.44  n/a     .000
     Major System   /     1.0 02:A1-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A1-MN         15.75    1.818 No_date   27:58   49.57  n/a     .000
      {MjSysSto=.4966E+02, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00298------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:B1             2.77     .097 No_date   28:09   21.19 .285     .000
      [CN= 56.0: N= 3.00: Tp=  .23]
      [IaREC= 4.00: SMIN= 79.69: SMAX=531.24: SK= .010]
      [InterEventTime=  12.00]
R0025:C00299------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A4             1.27     .212 No_date   28:01   57.38 .771     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 253.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0025:C00300------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A4             1.27     .212 No_date   28:01   57.38  n/a     .000
     Major System   /     1.0 02:A4-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A4-MN          1.27     .212 No_date   28:01   57.38  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00301------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:A1-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:A1-MN         15.75    1.818 No_date   27:58   49.57  n/a     .000
                    +     1.0 02:corr1-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:corr1-MN      15.87    1.818 No_date   28:15   57.37  n/a     .000
                    +     1.0 02:corr2         12.47     .276 No_date   29:10   34.14  n/a     .000
                    +     1.0 02:B1             2.77     .097 No_date   28:09   21.19  n/a     .000
                    +     1.0 02:A4-MN          1.27     .212 No_date   28:01   57.38  n/a     .000
                 SUM=     1.0 01:MH101         48.13    3.979 No_date   28:02   46.72  n/a     .000
R0025:C00302------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH101         48.13    3.979 No_date   28:02   46.72  n/a     .000
      fname :MH101.0025
      remark:Total Flows at MH101
R0025:C00303------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH101         48.13    3.979 No_date   28:02   46.72  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:101-102       48.13    3.953 No_date   28:05   46.72  n/a     .000
      [L/S/n=  368./ .540/.013]
      {Vmax= 3.134:Dmax= 1.114}
      [Din= 1.05:Dused= 1.36}
R0025:C00304------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:A2-MN         25.50    1.818 No_date   27:54   49.64  n/a     .000
                    +     1.0 02:101-102       48.13    3.953 No_date   28:05   46.72  n/a     .000
                 SUM=     1.0 01:MH102         73.63    5.771 No_date   28:05   47.73  n/a     .000
R0025:C00305------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH102         73.63    5.771 No_date   28:05   47.73  n/a     .000
      fname :MH102.0025
      remark:Total Flows at MH102
R0025:C00306------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A5             1.60     .279 No_date   28:01   60.02 .807     .000
      [XIMP=.71:TIMP=.71]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 300.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0025:C00307------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:A4-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:A5             1.60     .279 No_date   28:01   60.02  n/a     .000
                 SUM=     1.0 01:A5T            1.60     .279 No_date   28:01   60.02  n/a     .000
R0025:C00308------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A5T            1.60     .279 No_date   28:01   60.02  n/a     .000
     Major System   /     1.0 02:A5-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A5-MN          1.60     .279 No_date   28:01   60.02  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00309------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH102         73.63    5.771 No_date   28:05   47.73  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:102-103       73.63    5.682 No_date   28:08   47.73  n/a     .000
      [L/S/n=  504./ .280/.013]
      {Vmax= 2.688:Dmax= 1.448}
      [Din= 1.50:Dused= 1.76}
R0025:C00310------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:102-103       73.63    5.682 No_date   28:08   47.73  n/a     .000
                    +     1.0 02:A5-MN          1.60     .279 No_date   28:01   60.02  n/a     .000
                 SUM=     1.0 01:MH103         75.23    5.850 No_date   28:06   47.99  n/a     .000
R0025:C00311------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH103         75.23    5.850 No_date   28:06   47.99  n/a     .000
      fname :MH103.0025
      remark:Total Flows at MH103
R0025:C00312------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH103         75.23    5.850 No_date   28:06   47.99  n/a     .000
     [RDT= 1.00] out<-    1.0 01:103-104       75.23    5.807 No_date   28:08   47.99  n/a     .000
      [L/S/n=  438./ .460/.013]
      {Vmax= 3.289:Dmax= 1.280}
      [Din= 1.65:Dused= 1.65}
R0025:C00313------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A6             1.56     .274 No_date   28:00   60.02 .807     .000
      [XIMP=.71:TIMP=.71]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 280.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0025:C00314------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:A5-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:A6             1.56     .274 No_date   28:00   60.02  n/a     .000
                 SUM=     1.0 01:A6T            1.56     .274 No_date   28:00   60.02  n/a     .000
R0025:C00315------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A6T            1.56     .274 No_date   28:00   60.02  n/a     .000
     Major System   /     1.0 02:A6-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A6-MN          1.56     .274 No_date   28:00   60.02  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00316------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:A6-MN          1.56     .274 No_date   28:00   60.02  n/a     .000
                    +     1.0 02:103-104       75.23    5.807 No_date   28:08   47.99  n/a     .000
                    +     1.0 02:TODD_MJn      29.48    3.314 No_date   27:57   55.13  n/a     .000
                 SUM=     1.0 01:MH104        106.27    9.269 No_date   28:06   50.14  n/a     .000
R0025:C00317------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH104        106.27    9.269 No_date   28:06   50.14  n/a     .000
      fname :MH104.0025
      remark:Total Flows at MH104
R0025:C00318------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:B2            12.31    1.521 No_date   28:02   49.75 .669     .000
      [XIMP=.41:TIMP=.54]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 417.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0025:C00319------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:B2            12.31    1.521 No_date   28:02   49.75  n/a     .000
     Major System   /     1.0 02:B2-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:B2-MN         12.31    1.029 No_date   27:55   49.85  n/a     .000
      {MjSysSto=.2691E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00320------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:B2-MN         12.31    1.029 No_date   27:55   49.85  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:315-333       12.31    1.029 No_date   28:24   49.85  n/a     .000
      [L/S/n=  254./ .100/.013]
      {Vmax= 1.220:Dmax=  .838}
      [Din= 1.20:Dused= 1.20}
R0025:C00321------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:B3             5.59     .715 No_date   28:02   49.75 .669     .000
      [XIMP=.41:TIMP=.54]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 345.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0025:C00322------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:B3             5.59     .715 No_date   28:02   49.75  n/a     .000
     Major System   /     1.0 02:B3-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:B3-MN          5.59     .459 No_date   27:54   49.80  n/a     .000
      {MjSysSto=.1451E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00323------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:B3-MN          5.59     .459 No_date   27:54   49.80  n/a     .000
                    +     1.0 02:315-333       12.31    1.029 No_date   28:24   49.85  n/a     .000
                 SUM=     1.0 01:MH333         17.90    1.488 No_date   28:24   49.83  n/a     .000
R0025:C00324------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH333         17.90    1.488 No_date   28:24   49.83  n/a     .000
      fname :MH333.0025
      remark:Total Flows at MH333
R0025:C00325------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH333         17.90    1.488 No_date   28:24   49.83  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:333-335       17.90    1.485 No_date   28:24   49.83  n/a     .000
      [L/S/n=  251./ .100/.013]
      {Vmax= 1.302:Dmax= 1.057}
      [Din= 1.20:Dused= 1.29}
R0025:C00326------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:333-335       17.90    1.485 No_date   28:24   49.83  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:335-338       17.90    1.490 No_date   28:26   49.83  n/a     .000
      [L/S/n=  185./ .100/.013]
      {Vmax= 1.301:Dmax= 1.056}
      [Din= 1.20:Dused= 1.29}
R0025:C00327------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:335-338       17.90    1.490 No_date   28:26   49.83  n/a     .000
     [RDT= 1.00] out<-    1.0 01:338-340       17.90    1.456 No_date   28:26   49.83  n/a     .000
      [L/S/n=  233./ .100/.013]
      {Vmax= 1.331:Dmax=  .985}
      [Din= 1.35:Dused= 1.35}
R0025:C00328------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:B4             7.60     .960 No_date   28:02   49.75 .669     .000
      [XIMP=.41:TIMP=.54]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 388.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0025:C00329------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:B4             7.60     .960 No_date   28:02   49.75  n/a     .000
     Major System   /     1.0 02:B4-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:B4-MN          7.60     .655 No_date   27:55   50.00  n/a     .000
      {MjSysSto=.1611E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00330------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:338-340       17.90    1.456 No_date   28:26   49.83  n/a     .000
                    +     1.0 02:B4-MN          7.60     .655 No_date   27:55   50.00  n/a     .000
                 SUM=     1.0 01:MH340         25.50    2.104 No_date   28:18   49.88  n/a     .000
R0025:C00331------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH340         25.50    2.104 No_date   28:18   49.88  n/a     .000
      fname :MH340.0025
      remark:Total Flows at MH340
R0025:C00332------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH340         25.50    2.104 No_date   28:18   49.88  n/a     .000
     [RDT= 1.00] out<-    1.0 01:340-104       25.50    2.086 No_date   28:18   49.88  n/a     .000
      [L/S/n=  240./ .150/.013]
      {Vmax= 1.722:Dmax=  .917}
      [Din= 1.65:Dused= 1.65}
R0025:C00333------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:340-104       25.50    2.086 No_date   28:18   49.88  n/a     .000
                    +     1.0 02:MH104        106.27    9.269 No_date   28:06   50.14  n/a     .000
                 SUM=     1.0 01:MH104T       131.77   11.233 No_date   28:08   50.09  n/a     .000
R0025:C00334------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH104T       131.77   11.233 No_date   28:08   50.09  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:104-105      131.77   10.846 No_date   28:08   50.09  n/a     .000
      [L/S/n=  380./ .100/.013]
      {Vmax= 2.100:Dmax= 1.992}
      {HGTH= 2.35:WDTH= 2.68}
R0025:C00335------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:B5             2.20     .346 No_date   28:00   53.85 .724     .000
      [XIMP=.57:TIMP=.57]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 187.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0025:C00336------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:B5             2.20     .346 No_date   28:00   53.85  n/a     .000
     Major System   /     1.0 02:B5-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:B5-MN          2.20     .260 No_date   27:54   53.87  n/a     .000
      {MjSysSto=.3304E+02, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00337------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A8              .96     .177 No_date   28:00   60.02 .807     .000
      [XIMP=.71:TIMP=.71]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 186.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0025:C00338------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:A6-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:A8              .96     .177 No_date   28:00   60.02  n/a     .000
                 SUM=     1.0 01:A8T             .96     .177 No_date   28:00   60.02  n/a     .000
R0025:C00339------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A8T             .96     .177 No_date   28:00   60.02  n/a     .000
     Major System   /     1.0 02:A8-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A8-MN           .96     .177 No_date   28:00   60.02  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00340------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:104-105      131.77   10.846 No_date   28:08   50.09  n/a     .000
                    +     1.0 02:B5-MN          2.20     .260 No_date   27:54   53.87  n/a     .000
                    +     1.0 02:A8-MN           .96     .177 No_date   28:00   60.02  n/a     .000
                    +     1.0 02:TODD_MN3j       .00     .004 No_date   28:00   53.58  n/a     .000
                 SUM=     1.0 01:MH105        134.93   11.175 No_date   28:08   50.23  n/a     .000
R0025:C00341------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH105        134.93   11.175 No_date   28:08   50.23  n/a     .000
      fname :MH105.0025
      remark:Total Flows at MH105
R0025:C00342------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
 *  DIVERT HYD      ->    1.0 01:A8-MJ           .00     .000 No_date    0:00     .00  n/a     .000
           diverted <=    1.0 02:A8-MJ-JR        .00     .000 No_date    0:00     .00  n/a     .000
           diverted <=    1.0 03:A8-MJ-B6        .00     .000 No_date    0:00     .00  n/a     .000
R0025:C00343------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    DIVERT HYD      ->    1.0 01:MH105        134.93   11.175 No_date   28:08   50.23  n/a     .000
           diverted <=    1.0 02:MH105-JR      33.95    8.167 No_date   28:08   50.23  n/a     .000
           diverted <=    1.0 03:MH105-B6     100.98    3.008 No_date   28:08   50.23  n/a     .000
R0025:C00344------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:B7             7.19     .975 No_date   28:01   49.75 .669     .000
      [XIMP=.41:TIMP=.54]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 211.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0025:C00345------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:B4-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:B7             7.19     .975 No_date   28:01   49.75  n/a     .000
                 SUM=     1.0 01:B7-B4MJ        7.19     .975 No_date   28:01   49.75  n/a     .000
R0025:C00346------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:B7-B4MJ        7.19     .975 No_date   28:01   49.75  n/a     .000
     Major System   /     1.0 02:B7R-MJ          .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:B7R-MN         7.19     .629 No_date   27:53   50.01  n/a     .000
      {MjSysSto=.1702E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00347------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:B7R-MN         7.19     .629 No_date   27:53   50.01  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:360-106A       7.19     .629 No_date   28:21   50.01  n/a     .000
      [L/S/n=  167./ .100/.013]
      {Vmax= 1.089:Dmax=  .665}
      [Din= 1.05:Dused= 1.05}
R0025:C00348------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:B6             3.29     .465 No_date   28:00   49.75 .669     .000
      [XIMP=.41:TIMP=.54]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 148.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0025:C00349------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:B6             3.29     .465 No_date   28:00   49.75  n/a     .000
     Major System   /     1.0 02:B6-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:B6-MN          3.29     .064 No_date   27:34   49.75  n/a     .000
      {MjSysSto=.5165E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00350------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:EX-LAND       32.50    4.063 No_date   28:02   50.08 .673     .000
      [XIMP=.50:TIMP=.50]
      [LOSS= 2 :CN= 74.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 465.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 36.67: SMAX=244.49: SK= .010]
R0025:C00351------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:EX-LAND       32.50    4.063 No_date   28:02   50.08  n/a     .000
     Major System   /     1.0 02:EX-LAND-MJ      .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:EX-LAND-MN    32.50    2.275 No_date   27:52   50.26  n/a     .000
      {MjSysSto=.1224E+04, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00352------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:B7R-MJ          .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:EX-LAND-MJ      .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:B5-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:B6-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:B6-MN          3.29     .064 No_date   27:34   49.75  n/a     .000
                    +     1.0 02:A8-MJ-B6        .00     .000 No_date    0:00     .00  n/a     .000
                 SUM=     1.0 01:B6-B7ExMJ      3.29     .064 No_date   27:34   49.75  n/a     .000
R0025:C00353------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
```

```
     COMPUTE DUALHYD       1.0 01:B6-B7ExMJ      3.29     .064 No_date   27:34   49.75  n/a      .000
      Major System   /     1.0 02:B6R-MJ          .00     .000 No_date    0:00     .00  n/a      .000
      Minor System   \     1.0 03:B6R-MN         3.29     .064 No_date   27:34   49.75  n/a      .000
       {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
 R0025:C00354-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE PIPE      ->    1.0 02:MH105-B6     100.98    3.008 No_date   28:08   50.23  n/a      .000
      [RDT= 1.00] out<-    1.0 01:105-106A     100.98    3.018 No_date   28:02   50.23  n/a      .000
       [L/S/n=  208./ .100/.013]
       {Vmax= 1.597:Dmax= 1.249}
       [Din= 1.80:Dused= 1.80}
 R0025:C00355-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:360-106A       7.19     .629 No_date   28:21   50.01  n/a      .000
                     +     1.0 02:105-106A     100.98    3.018 No_date   28:02   50.23  n/a      .000
                     +     1.0 02:B6R-MN         3.29     .064 No_date   27:34   49.75  n/a      .000
                     +     1.0 02:B6R-MJ          .00     .000 No_date    0:00     .00  n/a      .000
                  SUM=     1.0 01:MH106A       111.46    3.702 No_date   28:02   50.20  n/a      .000
 R0025:C00356-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     SAVE HYD              1.0 01:MH106A       111.46    3.702 No_date   28:02   50.20  n/a      .000
       fname :MH106A.0025
       remark:Total Flows at MH106A
 R0025:C00357-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE PIPE      ->    1.0 02:MH106A       111.46    3.702 No_date   28:02   50.20  n/a      .000
  *   [RDT= 1.00] out<-    1.0 01:106A-106     111.46    3.699 No_date   28:16   50.20  n/a      .000
       [L/S/n=  190./ .100/.013]
       {Vmax= 1.635:Dmax= 1.487}
       [Din= 1.80:Dused= 1.81}
 R0025:C00358-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:A9             2.44     .433 No_date   28:00   60.02 .807      .000
       [XIMP=.71:TIMP=.71]
       [LOSS= 2 :CN= 75.0]
       [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 262.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 33.81: SMAX=225.43: SK= .010]
 R0025:C00359-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     COMPUTE DUALHYD       1.0 01:A9             2.44     .433 No_date   28:00   60.02  n/a      .000
      Major System   /     1.0 02:A9-MJ           .00     .000 No_date    0:00     .00  n/a      .000
      Minor System   \     1.0 03:A9-MN          2.44     .433 No_date   28:00   60.02  n/a      .000
 R0025:C00360-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:106A-106     111.46    3.699 No_date   28:16   50.20  n/a      .000
                     +     1.0 02:A9-MN          2.44     .433 No_date   28:00   60.02  n/a      .000
                  SUM=     1.0 01:MH106        113.90    4.090 No_date   28:01   50.41  n/a      .000
 R0025:C00361-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     SAVE HYD              1.0 01:MH106        113.90    4.090 No_date   28:01   50.41  n/a      .000
       fname :MH106.0025
       remark:Total Flows at MH106
 R0025:C00362-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE PIPE      ->    1.0 02:MH106        113.90    4.090 No_date   28:01   50.41  n/a      .000
  *   [RDT= 1.00] out<-    1.0 01:106-107      113.90    4.067 No_date   28:03   50.41  n/a      .000
       [L/S/n=  123./ .100/.013]
       {Vmax= 1.676:Dmax= 1.544}
       [Din= 1.80:Dused= 1.88}
 R0025:C00363-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:A10            4.14     .526 No_date   28:01   46.81 .629      .000
       [XIMP=.35:TIMP=.47]
       [LOSS= 2 :CN= 75.0]
       [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 183.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 33.81: SMAX=225.43: SK= .010]
 R0025:C00364-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     COMPUTE DUALHYD       1.0 01:A10            4.14     .526 No_date   28:01   46.81  n/a      .000
      Major System   /     1.0 02:A10-MJ          .00     .000 No_date    0:00     .00  n/a      .000
      Minor System   \     1.0 03:A10-MN         4.14     .310 No_date   27:52   46.90  n/a      .000
       {MjSysSto=.1196E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
 R0025:C00365-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:A11           10.61    1.511 No_date   28:01   54.09 .727      .000
       [XIMP=.53:TIMP=.62]
       [LOSS= 2 :CN= 75.0]
       [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 379.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 33.81: SMAX=225.43: SK= .010]
 R0025:C00366-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     COMPUTE DUALHYD       1.0 01:A11           10.61    1.511 No_date   28:01   54.09  n/a      .000
      Major System   /     1.0 02:A11-MJ          .00     .000 No_date    0:00     .00  n/a      .000
      Minor System   \     1.0 03:A11-MN        10.61     .993 No_date   27:54   54.21  n/a      .000
       {MjSysSto=.2791E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
 R0025:C00367-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:106-107      113.90    4.067 No_date   28:03   50.41  n/a      .000
                     +     1.0 02:A10-MN         4.14     .310 No_date   27:52   46.90  n/a      .000
                     +     1.0 02:A11-MN        10.61     .993 No_date   27:54   54.21  n/a      .000
                  SUM=     1.0 01:MH107        128.65    5.370 No_date   28:03   50.61  n/a      .000
 R0025:C00368-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     SAVE HYD              1.0 01:MH107        128.65    5.370 No_date   28:03   50.61  n/a      .000
       fname :MH107.0025
       remark:Total Flows at MH107
 R0025:C00369-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE PIPE      ->    1.0 02:MH107        128.65    5.370 No_date   28:03   50.61  n/a      .000
  *   [RDT= 1.00] out<-    1.0 01:107-119      128.65    5.374 No_date   28:04   50.61  n/a      .000
       [L/S/n=  114./ .120/.013]
       {Vmax= 1.922:Dmax= 1.653}
       [Din= 1.80:Dused= 2.01}
 R0025:C00370-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE PIPE      ->    1.0 02:107-119      128.65    5.374 No_date   28:04   50.61  n/a      .000
  *   [RDT= 1.00] out<-    1.0 01:119-108      128.65    5.354 No_date   28:04   50.61  n/a      .000
       [L/S/n=   66./ .120/.013]
       {Vmax= 1.922:Dmax= 1.653}
       [Din= 1.80:Dused= 2.01}
 R0025:C00371-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:A12           12.29    1.704 No_date   28:01   49.75 .669      .000
       [XIMP=.41:TIMP=.54]
       [LOSS= 2 :CN= 75.0]
       [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 183.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 33.81: SMAX=225.43: SK= .010]
 R0025:C00372-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     COMPUTE DUALHYD       1.0 01:A12           12.29    1.704 No_date   28:01   49.75  n/a      .000
      Major System   /     1.0 02:A12-MJ          .00     .000 No_date    0:00     .00  n/a      .000
      Minor System   \     1.0 03:A12-MN        12.29    1.029 No_date   27:52   49.91  n/a      .000
       {MjSysSto=.3558E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
 R0025:C00373-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:A13            2.59     .435 No_date   28:01   60.02 .807      .000
       [XIMP=.71:TIMP=.71]
       [LOSS= 2 :CN= 75.0]
       [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 379.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 33.81: SMAX=225.43: SK= .010]
 R0025:C00374-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     COMPUTE DUALHYD       1.0 01:A13            2.59     .435 No_date   28:01   60.02  n/a      .000
      Major System   /     1.0 02:A13-MJ          .00     .000 No_date    0:00     .00  n/a      .000
      Minor System   \     1.0 03:A13-MN         2.59     .435 No_date   28:01   60.02  n/a      .000
 R0025:C00375-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:Pond-Block     2.94     .375 No_date   28:00   47.01 .632      .000
       [XIMP=.41:TIMP=.41]
       [LOSS= 2 :CN= 75.0]
       [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 183.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 33.81: SMAX=225.43: SK= .010]
 R0025:C00376-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:119-108      128.65    5.354 No_date   28:04   50.61  n/a      .000
                     +     1.0 02:A13-MN         2.59     .435 No_date   28:01   60.02  n/a      .000
                     +     1.0 02:A12-MN        12.29    1.029 No_date   27:52   49.91  n/a      .000
                  SUM=     1.0 01:MH108        143.53    6.791 No_date   28:03   50.72  n/a      .000
 R0025:C00377-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     SAVE HYD              1.0 01:MH108        143.53    6.791 No_date   28:03   50.72  n/a      .000
       fname :MH108.0025
       remark:Total Flows at MH108
 R0025:C00378-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE PIPE      ->    1.0 02:MH108        143.53    6.791 No_date   28:03   50.72  n/a      .000
  *   [RDT= 1.00] out<-    1.0 01:108-116      143.53    6.772 No_date   28:04   50.72  n/a      .000
       [L/S/n=   77./ .130/.013]
       {Vmax= 2.100:Dmax= 1.778}
       [Din= 1.80:Dused= 2.17}
 R0025:C00379-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE PIPE      ->    1.0 02:108-116      143.53    6.772 No_date   28:04   50.72  n/a      .000
  *   [RDT= 1.00] out<-    1.0 01:116-corrig   143.53    6.762 No_date   28:05   50.72  n/a      .000
       [L/S/n=   80./ .130/.013]
       {Vmax= 2.098:Dmax= 1.776}
       [Din= 1.80:Dused= 2.16}
 R0025:C00380-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:116-corrig   143.53    6.762 No_date   28:05   50.72  n/a      .000
                     +     1.0 02:Pond-Block     2.94     .375 No_date   28:00   47.01  n/a      .000
                  SUM=     1.0 01:Corrigan     146.47    7.034 No_date   28:04   50.65  n/a      .000
 R0025:C00381-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     SAVE HYD              1.0 01:Corrigan     146.47    7.034 No_date   28:04   50.65  n/a      .000
       fname :Corrigan.0025
       remark:HYD_COMMENT=["Total Flows at Corrigan Pond]
 R0025:C00382-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE RESERVOIR ->    1.0 02:Corrigan     146.47    7.034 No_date   28:04   50.65  n/a      .000
                 out <=    1.0 01:Co-P         146.47    6.458 No_date   28:16   50.64  n/a      .000
            overflow <=    1.0 03:Co-P-OVF        .00     .000 No_date    0:00     .00  n/a      .000
      {MxStoUsed=.1034E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
 R0025:C00383-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:Co-P-OVF        .00     .000 No_date    0:00     .00  n/a      .000
                     +     1.0 02:Co-P         146.47    6.458 No_date   28:16   50.64  n/a      .000
                     +     1.0 02:N_TO       54838.44  110.461 No_date   36:21   29.14  n/a      .000
                     +     1.0 02:MH105-JR      33.95    8.167 No_date   28:08   50.23  n/a      .000
                     +     1.0 02:A8-MJ-JR        .00     .000 No_date    0:00     .00  n/a      .000
                     +     1.0 02:A9-MJ           .00     .000 No_date    0:00     .00  n/a      .000
                     +     1.0 02:A10-MJ          .00     .000 No_date    0:00     .00  n/a      .000
                     +     1.0 02:A11-MJ          .00     .000 No_date    0:00     .00  n/a      .000
                     +     1.0 02:A12-MJ          .00     .000 No_date    0:00     .00  n/a      .000
                     +     1.0 02:A13-MJ          .00     .000 No_date    0:00     .00  n/a      .000
                  SUM=     1.0 01:corrig     55018.86  111.029 No_date   36:20   29.21  n/a      .000
 R0025:C00384-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     SAVE HYD              1.0 01:corrig     55018.86  111.029 No_date   36:20   29.21  n/a      .000
       fname :corrig.0025
       remark:Total Flows at Corrigan Pond
 #******************************************************************************
 #    Corrigan Pond 1
 #    - Rating curve obtained from Barrhaven South MSS modeling
 #    - Tributary Drainage Area to MSS Pond 1 = 145 ha
 #******************************************************************************
 #
 # Hydrograph from Corrigan Drain routed to Jockvale Road
 # Channel X-Section obtained from RVCA Hydraulic Model - Station 2462
 #
 R0025:C00385-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE CHANNEL   ->    1.0 02:corrig     55018.86  111.029 No_date   36:20   29.21  n/a      .000
      [RDT= 1.00] out<-    1.0 01:N_MI       55018.86  111.007 No_date   36:23   29.21  n/a      .000
       [L/S/n=  580./ .445/.045]
       {Vmax= 1.964:Dmax= 1.850}
 #******************************************************************************
 #    Catchment MILLS
 #    - To SWM Facility north of the Jock
 #    - Primarily residental development
 #******************************************************************************
 R0025:C00386-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:MILLS        175.99   15.275 No_date   28:07   44.62 .600      .000
       [XIMP=.38:TIMP=.38]
       [LOSS= 2 :CN= 74.0]
       [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI=1118.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 36.67: SMAX=244.49: SK= .010]
 #******************************************************************************
 #    Chapman Mills SWM Pond
 #    - Rating curve obtained from CCL hydraulic modeling
 #******************************************************************************
 R0025:C00387-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE RESERVOIR ->    1.0 02:MILLS        175.99   15.275 No_date   28:07   44.62  n/a      .000
                 out <=    1.0 01:MILL_P       162.60    4.050 No_date   28:16   44.62  n/a      .000
            overflow <=    1.0 03:MIL-OV        13.39    8.160 No_date   28:16   44.62  n/a      .000
      {MxStoUsed=.2310E+01  m3, TotOvfVol=.5973E+00  m3, N-Ovf=    2, TotDurOvf=    1.hrs}
 R0025:C00388-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:N_MI       55018.86  111.007 No_date   36:23   29.21  n/a      .000
                     +     1.0 02:MIL-OV        13.39    8.160 No_date   28:16   44.62  n/a      .000
                     +     1.0 02:MILL_P       162.60    4.050 No_date   28:16   44.62  n/a      .000
                  SUM=     1.0 01:SN_MI      55194.86  111.576 No_date   36:23   29.26  n/a      .000
 R0025:C00389-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     SAVE HYD              1.0 01:SN_MI      55194.86  111.576 No_date   36:23   29.26  n/a      .000
       fname :SN_MI.0025
       remark:Total Flows at Jockvale Road
 #
 # Hydrograph from Jockvale Road routed to Heart's Desire
 # Channel X-Section obtained from RVCA Hydraulic Model - Station 689
 #
 R0025:C00390-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE CHANNEL   ->    1.0 02:SN_MI      55194.86  111.576 No_date   36:23   29.26  n/a      .000
      [RDT= 1.00] out<-    1.0 01:N_DE       55194.86  111.136 No_date   36:40   29.26  n/a      .000
       [L/S/n= 1962./ .223/.045]
       {Vmax= 1.515:Dmax= 2.337}
 #******************************************************************************
 #    Catchment DESIRE
 #    - To Jock River (north of the Jock)
 #    - Rural-estate subdivision (Heart's Desire Community)
 #******************************************************************************
 R0025:C00391-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:DESIRE        23.78    2.161 No_date   28:03   40.77 .548      .000
       [XIMP=.25:TIMP=.25]
       [LOSS= 2 :CN= 77.0]
       [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 400.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 31.15: SMAX=207.66: SK= .010]
 #******************************************************************************
 #    Catchment JOCKVA
 #    - To Jockvale SWM Facility
 #    - Residential development & golf course
 #    - JFSA 2021-01-11 update JOCKVA after updating CORRIG as per IBI GROUP, July 2008.
 #      JOCKVA area became 225.13 ha instead of 257.63 ha. JOCKVA separated into two areas JOCKVA and EX-LAND 32.5 ha as
 #******************************************************************************
 R0025:C00392-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:JOCKVA       225.13   21.797 No_date   28:07   50.08 .673      .000
       [XIMP=.50:TIMP=.50]
       [LOSS= 2 :CN= 74.0]
       [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI=1311.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 36.67: SMAX=244.49: SK= .010]
 R0025:C00393-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:EX-LAND-MN    32.50    2.275 No_date   27:52   50.26  n/a      .000
                     +     1.0 02:JOCKVA       225.13   21.797 No_date   28:07   50.08  n/a      .000
                     +     1.0 02:B2-MJ           .00     .000 No_date    0:00     .00  n/a      .000
                     +     1.0 02:B3-MJ           .00     .000 No_date    0:00     .00  n/a      .000
                  SUM=     1.0 01:JOCKVA-TO    257.63   24.072 No_date   28:07   50.10  n/a      .000
 R0025:C00394-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     SAVE HYD              1.0 01:JOCKVA-TO    257.63   24.072 No_date   28:07   50.10  n/a      .000
       fname :JOCKVA-TO.0025
       remark:Total Flows at KB first pond
 #******************************************************************************
 #    Jockvale SWM Facility
 #    - Rating curve obtained from Jockvale Servicing Study (CCL 1999)
 #******************************************************************************
 R0025:C00395-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE RESERVOIR ->    1.0 02:JOCKVA-TO    257.63   24.072 No_date   28:07   50.10  n/a      .000
                 out <=    1.0 01:JOCK_P       257.63    9.145 No_date   28:37   50.10  n/a      .000
            overflow <=    1.0 03:JO-OVF          .00     .000 No_date    0:00     .00  n/a      .000
      {MxStoUsed=.5425E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
 R0025:C00396-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:N_DE       55194.86  111.136 No_date   36:40   29.26  n/a      .000
                     +     1.0 02:DESIRE        23.78    2.161 No_date   28:03   40.77  n/a      .000
                     +     1.0 02:JO-OVF          .00     .000 No_date    0:00     .00  n/a      .000
                     +     1.0 02:JOCK_P       257.63    9.145 No_date   28:37   50.10  n/a      .000
                  SUM=     1.0 01:SN_DE      55476.27  111.989 No_date   36:39   29.36  n/a      .000
 R0025:C00397-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     SAVE HYD              1.0 01:SN_DE      55476.27  111.989 No_date   36:39   29.36  n/a      .000
       fname :SN_DE.0025
       remark:Total Flows at Heart's Desire
 #
 # Hydrograph from Heart's Desire routed to Rideau River
 # Channel X-Section obtained from RVCA Hydraulic Model - Station 0
 #
 R0025:C00398-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE CHANNEL   ->    1.0 02:SN_DE      55476.27  111.989 No_date   36:39   29.36  n/a      .000
      [RDT= 1.00] out<-    1.0 01:N1         55476.27  111.973 No_date   36:42   29.36  n/a      .000
       [L/S/n=  563./ .967/.045]
       {Vmax= 2.009:Dmax= 1.172}
 #******************************************************************************
 #    Catchment S-2
 #    - To Jock River (north and south)
 #    - Undeveloped floodplain and river
 #******************************************************************************
 R0025:C00399-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS NASHYD     1.0 01:S-2          102.94    3.971 No_date   28:20   30.13 .405      .000
       [CN= 72.0: N= 3.00: Tp=  .40]
       [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
       [InterEventTime=  12.00]
 R0025:C00400-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:N1         55476.27  111.973 No_date   36:42   29.36  n/a      .000
                     +     1.0 02:S-2          102.94    3.971 No_date   28:20   30.13  n/a      .000
                  SUM=     1.0 01:SN_N1      55579.21  112.199 No_date   36:41   29.36  n/a      .000
 R0025:C00401-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     SAVE HYD              1.0 01:SN_N1      55579.21  112.199 No_date   36:41   29.36  n/a      .000
       fname :SN_N1.0025
       remark:Total Flows at Rideau River
 ##############################################################################
   ** END OF RUN :   49

 *******************************************************************************************

  RUN#:COMMAND#
 R0050:C00001------------------------------------------------------------------------------------
      START
       [TZERO =    .00 hrs on        0]
       [METOUT=   2    (1=imperial, 2=metric output)]
       [NSTORM=   1 ]
       [NRUN  = 0050 ]
 #******************************************************************************
 #  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
 #******************************************************************************
 #  Project Name: [Jock River]    Project Number: [1474-16]
 #  Date        : 04-03-2021
 #  Modeller    : [M.M.]
 #  Company     : JFSAinc.
 #  License #   :  2549237
 #******************************************************************************
 # CALIBRATION OF SUMMER MODEL PARAMETERS
 # USING CONTINUOUS SIMULATIONS
 # Rainfall data from JFSA raingauge installed at site + other gauges by the City
 # Use data collected from May 1st to July 14, 2003
 # 2020-11-30 change TMJSTO in COMPUTE DUALHYD (TMJSTO = 0.1 instead of 0.0001)
 # 2020-12-01 correct pond curve values
 # 2020-12-01 change W_CLAR_BRAZ XIMP to 0.55, SLPI=[0.5](%) (impervious slope), and LGI up to 700m
 # 2021-02-19 Change the slope for ROUTE CHANNEL Station 2462 (NHYDout=["N_TO"] ,NHYDin=["SN_TO"]) from 0.033 % (as per S
 # 2021-02-19 Change the slope for ROUTE CHANNEL Station 5002 (NHYDout=["N_WC"] ,NHYDin=["SN_CE"]) from 0.01 % (as per St
 # ----------------------------------------------------------------------------
 R0050:C00002------------------------------------------------------------------------------------
      READ STORM
       Filename = storm.001
       Comment  = Pluie SCS de 24 hres 1:50 ans pour Ottawa CDA
       [SDT=10.00:SDUR=  24.00:PTOT=  81.51]
 R0050:C00003------------------------------------------------------------------------------------
      MODIFY STORM
       [RFACT=  1.00:TSHIFT= 960.00 min]
       [SDT=10.00:SDUR=  40.00:PTOT=  81.51]
 R0050:C00004------------------------------------------------------------------------------------
      DEFAULT VALUES
       Filename = T:\PROJ\1474-16\Design\20201026-QuantityControlAnalysis\SWMHYMO\SMR-Model\updated3\CitiGate.DEF
       ICASEdv = 1 (read and print data)
       FileTitle= File comment: [Based onvarious calibration exercises in Onta
                   THE FOLLOWING PARAMETERS ARE USED IN THE DESIGN STANDHYD COM
       Horton's infiltration equation parameters:
       [Fo= 76.20 mm/hr] [Fc=13.20 mm/hr] [DCAY= 4.14 /hr] [F=  .00 mm]
       Parameters for PERVIOUS surfaces in STANDHYD:
       [IAper=   4.67 mm] [LGP=50.00 m] [MNP= .250]
```

```
      Parameters for IMPERVIOUS surfaces in STANDHYD:
      [IAimp=   1.57 mm] [CLI= 1.50]   [MNI= .013]
      Parameters used in NASHYD:
      [Ia=   4.67 mm] [N= 3.00]
      Average monthly Pan Evaporation data in    (mm)
   JAN   FEB   MAR   APR   MAY   JUN   JUL   AUG   SEP   OCT   NOV   DEC
   .00   .00   .00   .00   .00   .00   .00   .00   .00   .00   .00   .00
      Average monthly Potential Evapotranspiration in    (mm)
   JAN   FEB   MAR   APR   MAY   JUN   JUL   AUG   SEP   OCT   NOV   DEC
   .00   .00   .00   .00   .00   .00   .00   .00   .00   .00   .00   .00
R0050:C00005-------------------------------------------------------------------------------------
     COMPUTE API
      [APIini= 50.00: APIkdy= .8500: APIkdt= .9989]
      {APImax=113.33: APIavg= 67.14: APImin= 44.87}
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.32
R0050:C00006------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:JR_HW       3680.00   18.440 No_date   36:55   30.33 .372     .000
      [CN= 64.0: N= 3.00: Tp= 7.13]
      [IaREC= 4.00: SMIN= 57.05: SMAX=380.32: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.32
R0050:C00007------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_13        971.00    6.937 No_date   32:34   28.27 .347     .000
      [CN= 61.0: N= 3.00: Tp= 3.76]
      [IaREC= 4.00: SMIN= 64.50: SMAX=430.01: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.80
R0050:C00008------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:JR_GWM      3074.00    8.912 No_date   39:59   24.31 .298     .000
      [CN= 55.0: N= 3.00: Tp=11.33]
      [IaREC= 4.00: SMIN= 83.24: SMAX=554.96: SK= .010]
      [InterEventTime=  12.00]
R0050:C00009------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:JR_ASH      1781.00   16.834 No_date   32:39   36.85 .452     .000
      [CN= 72.0: N= 3.00: Tp= 3.91]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
R0050:C00010------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_11        500.00    9.061 No_date   29:21   31.73 .389     .000
      [CN= 66.0: N= 3.00: Tp= 1.24]
      [IaREC= 4.00: SMIN= 52.62: SMAX=350.79: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.80
R0050:C00011------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:NN_CK       1917.00   12.342 No_date   34:26   31.73 .389     .000
      [CN= 66.0: N= 3.00: Tp= 5.29]
      [IaREC= 4.00: SMIN= 52.62: SMAX=350.79: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.52
R0050:C00012------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_10       5666.00   32.402 No_date   37:52   36.85 .452     .000
      [CN= 72.0: N= 3.00: Tp= 8.00]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.75
R0050:C00013------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:KG_CK       8376.00   31.024 No_date   39:59   31.73 .389     .000
      [CN= 66.0: N= 3.00: Tp=11.66]
      [IaREC= 4.00: SMIN= 52.62: SMAX=350.79: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.68
R0050:C00014------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_9        1132.00   14.039 No_date   30:53   35.35 .434     .000
      [CN= 70.0: N= 3.00: Tp= 2.51]
      [IaREC= 4.00: SMIN= 43.07: SMAX=287.10: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.82
R0050:C00015------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:NC_CK       4464.00   15.472 No_date   39:59   28.95 .355     .000
      [CN= 62.0: N= 3.00: Tp=11.32]
      [IaREC= 4.00: SMIN= 61.90: SMAX=412.66: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.80
R0050:C00016------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_8         131.00    2.740 No_date   28:57   29.64 .364     .000
      [CN= 63.0: N= 3.00: Tp=  .90]
      [IaREC= 4.00: SMIN= 59.42: SMAX=396.11: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.65
R0050:C00017------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:HB_DR       3854.00   18.180 No_date   38:32   31.73 .389     .000
      [CN= 66.0: N= 3.00: Tp= 8.42]
      [IaREC= 4.00: SMIN= 52.62: SMAX=350.79: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.82
R0050:C00018------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_7        3197.00   13.937 No_date   36:23   25.61 .314     .000
      [CN= 57.0: N= 3.00: Tp= 6.65]
      [IaREC= 4.00: SMIN= 76.32: SMAX=508.81: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.75
R0050:C00019------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_6         165.00    1.285 No_date   33:02   32.44 .398     .000
      [CN= 67.0: N= 3.00: Tp= 4.18]
      [IaREC= 4.00: SMIN= 50.55: SMAX=336.97: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.67
R0050:C00020------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:VG_DR       1332.00    9.332 No_date   35:12   36.85 .452     .000
      [CN= 72.0: N= 3.00: Tp= 5.95]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
R0050:C00021------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_5         224.00    8.187 No_date   28:45   41.51 .509     .000
      [CN= 77.0: N= 3.00: Tp=  .75]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.20
R0050:C00022------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:FL_CK       4945.00   44.623 No_date   33:18   38.37 .471     .000
      [CN= 74.0: N= 3.00: Tp= 4.45]
      [IaREC= 4.00: SMIN= 36.67: SMAX=244.49: SK= .010]
      [InterEventTime=  12.00]
R0050:C00023------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_5A2        20.00     .943 No_date   28:35   45.60 .560     .000
      [CN= 81.0: N= 3.00: Tp=  .62]
      [IaREC= 4.00: SMIN= 25.21: SMAX=168.09: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.61
R0050:C00024------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_5A1      1412.00    8.794 No_date   37:48   39.93 .490     .000
      [CN= 75.0: N= 3.00: Tp= 8.00]
      [IaREC= 4.00: SMIN= 33.81: SMAX=225.43: SK= .010]
      [InterEventTime=  12.00]
R0050:C00025------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_4         585.00   12.896 No_date   29:55   45.60 .560     .000
      [CN= 81.0: N= 3.00: Tp= 1.75]
      [IaREC= 4.00: SMIN= 25.21: SMAX=168.09: SK= .010]
      [InterEventTime=  12.00]
R0050:C00026------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:LM_CK       1021.00   17.059 No_date   30:46   44.77 .549     .000
      [CN= 80.0: N= 3.00: Tp= 2.46]
      [IaREC= 4.00: SMIN= 26.32: SMAX=175.50: SK= .010]
      [InterEventTime=  12.00]
R0050:C00027------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_2         177.00    6.469 No_date   28:45   41.51 .509     .000
      [CN= 77.0: N= 3.00: Tp=  .75]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0050:C00028------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SM_DR       1122.00   15.544 No_date   31:43   45.60 .560     .000
      [CN= 81.0: N= 3.00: Tp= 3.25]
      [IaREC= 4.00: SMIN= 25.21: SMAX=168.09: SK= .010]
      [InterEventTime=  12.00]
R0050:C00029------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:MO_DR       2737.00   34.946 No_date   31:29   40.72 .500     .000
      [CN= 76.0: N= 3.00: Tp= 3.03]
      [IaREC= 4.00: SMIN= 32.46: SMAX=216.39: SK= .010]
      [InterEventTime=  12.00]
#
# Routing hydrographs
#
# Starting with the addition of Jock River Headwater and Subwatershed 13
#
R0050:C00030------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:JR_HW       3680.00   18.440 No_date   36:55   30.33  n/a     .000
                     +    1.0 02:SW_13        971.00    6.937 No_date   32:34   28.27  n/a     .000
                  SUM=    1.0 01:S_N13       4651.00   23.559 No_date   35:24   29.90  n/a     .000
#
# Sum of hydrographs from Node 13 routed to Node 13A
# (Approximated cross-section - see cross-section 258)
# Use n=0.04 for summer conditions and n=0.025 for spring conditions
#
R0050:C00031------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N13       4651.00   23.559 No_date   35:24   29.90  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N13A        4651.00   19.136 No_date   39:06   29.90  n/a     .000
      [L/S/n= 9074./ .022/.040]
      {Vmax=  .574:Dmax= 3.920}
#
# Addition of Subwatershed Jock River at Goodwood Marsh to Node 13A
#
R0050:C00032------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N13A        4651.00   19.136 No_date   39:06   29.90  n/a     .000
                     +    1.0 02:JR_GWM      3074.00    8.912 No_date   39:59   24.31  n/a     .000
                  SUM=    1.0 01:SN13A       7725.00   27.939 No_date   39:54   27.68  n/a     .000
#
# Insertion of a reservoir to simulate the effects of the Goodwood Marsh
#
R0050:C00033------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:SN13A       7725.00   27.939 No_date   39:54   27.68  n/a     .000
                 out <=   1.0 01:RES_GM      7725.00    3.808 No_date   61:35   27.67  n/a     .000
     {MxStoUsed=.1481E+03  m3}
#
R0050:C00034------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:RES_GM      7725.00    3.808 No_date   61:35   27.67  n/a     .000
      fname :H_RESGM
      remark:Outflow from Res GM
# Output of Reservoir Goodwood Marsh routed from Node 13A to Node 12
# (Approximated cross-section - see cross-section 258)
# Use n=0.04 for summer conditions and n=0.025 for spring conditions
R0050:C00035------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:RES_GM      7725.00    3.808 No_date   61:35   27.67  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N12         7725.00    3.804 No_date   64:19   27.68  n/a     .000
      [L/S/n= 5926./ .076/.040]
      {Vmax=  .556:Dmax= 1.541}
#
# Addition of Subwatershed Jock River at Ashton to Node 12
#
R0050:C00036------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N12         7725.00    3.804 No_date   64:19   27.68  n/a     .000
                     +    1.0 02:JR_ASH      1781.00   16.834 No_date   32:39   36.85  n/a     .000
                  SUM=    1.0 01:S_N12       9506.00   18.867 No_date   32:42   29.39  n/a     .000
R0050:C00037------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:S_N12       9506.00   18.867 No_date   32:42   29.39  n/a     .000
      fname :H_SN12
      remark:flow at S_N12 near Ashton
#
# Sum of hydrographs from Node 12 routed to Node 11
# (Approximated cross-section - see cross-section 258)
# Use n=0.04 for summer conditions and n=0.025 for spring conditions
#
# Sum of hydrographs from Node 12 routed to Node 11 with Dummy section 248
#
R0050:C00038------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N12       9506.00   18.867 No_date   32:42   29.39  n/a     .000
     [RDT= 1.00] out<-    1.0 01:Dum11       9506.00   18.687 No_date   32:59   29.39  n/a     .000
      [L/S/n=  972./ .054/.040]
      {Vmax=  .751:Dmax= 3.029}
#
# Addition of Subwatershed 11 and No Name Creek to Node 11
#
R0050:C00039------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:Dum11       9506.00   18.687 No_date   32:59   29.39  n/a     .000
                     +    1.0 02:SW_11        500.00    9.061 No_date   29:21   31.73  n/a     .000
                     +    1.0 02:NN_CK       1917.00   12.342 No_date   34:26   31.73  n/a     .000
                  SUM=    1.0 01:S_N11      11923.00   32.851 No_date   33:00   29.87  n/a     .000
#
# Sum of hydrographs from Node 11 routed to Node 10
# Section 1
#
R0050:C00040------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N11      11923.00   32.851 No_date   33:00   29.87  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N10        11923.00   20.490 No_date   40:02   29.87  n/a     .000
      [L/S/n=14028./ .157/.040]
      {Vmax=  .474:Dmax= 1.423}
#
# Addition of Subwatershed 10 to Node 10
#
R0050:C00041------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N10        11923.00   20.490 No_date   40:02   29.87  n/a     .000
                     +    1.0 02:SW_10       5666.00   32.402 No_date   37:52   36.85  n/a     .000
                  SUM=    1.0 01:S_N10      17589.00   52.600 No_date   38:19   32.12  n/a     .000
R0050:C00042------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:S_N10      17589.00   52.600 No_date   38:19   32.12  n/a     .000
      fname :H_SN10
      remark:flow at S_N10: N10 + SW_10
# Addition of Kings Creek to S_N10
#
R0050:C00043------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:S_N10      17589.00   52.600 No_date   38:19   32.12  n/a     .000
                     +    1.0 02:KG_CK       8376.00   31.024 No_date   39:59   31.73  n/a     .000
                  SUM=    1.0 01:S_N10A     25965.00   82.746 No_date   39:45   31.99  n/a     .000
#
# Sum of hydrographs from Node 10 routed to Node 9
# Section 2
#
R0050:C00044------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N10A     25965.00   82.746 No_date   39:45   31.99  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N9         25965.00   80.980 No_date   39:59   31.99  n/a     .000
      [L/S/n= 3982./ .075/.040]
      {Vmax=  .744:Dmax= 2.015}
#
# Addition of Subwatershed 9 and Nichols Creek to Node 9
#
R0050:C00045------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N9         25965.00   80.980 No_date   39:59   31.99  n/a     .000
                     +    1.0 02:SW_9        1132.00   14.039 No_date   30:53   35.35  n/a     .000
                     +    1.0 02:NC_CK       4464.00   15.472 No_date   39:59   28.95  n/a     .000
                  SUM=    1.0 01:S_N9       31561.00   99.424 No_date   39:59   31.68  n/a     .000
#
# Sum of hydrographs from Node 9 routed to Node 8
# Section 3
#
R0050:C00046------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N9       31561.00   99.424 No_date   39:59   31.68  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N8         31561.00   93.665 No_date   39:59   31.68  n/a     .000
      [L/S/n= 2269./ .088/.045]
      {Vmax=  .367:Dmax= 1.834}
#
# Addition of Subwatershed 8 and Hobb's Drain to Node 8
#
R0050:C00047------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N8         31561.00   93.665 No_date   39:59   31.68  n/a     .000
                     +    1.0 02:SW_8         131.00    2.740 No_date   28:57   29.64  n/a     .000
                     +    1.0 02:HB_DR       3854.00   18.180 No_date   38:32   31.73  n/a     .000
                  SUM=    1.0 01:S_N8       35546.00  111.843 No_date   39:59   31.68  n/a     .000
#
# Sum of hydrographs from Node 8 routed to Node 7
# Section 4
#
R0050:C00048------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N8       35546.00  111.843 No_date   39:59   31.68  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N7         35546.00   95.475 No_date   44:55   31.68  n/a     .000
      [L/S/n= 3750./ .053/.070]
      {Vmax=  .231:Dmax= 2.290}
#
# Addition of Subwatershed 7 to Node 7
#
R0050:C00049------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N7         35546.00   95.475 No_date   44:55   31.68  n/a     .000
                     +    1.0 02:SW_7        3197.00   13.937 No_date   36:23   25.61  n/a     .000
                  SUM=    1.0 01:S_N7       38743.00  102.892 No_date   43:46   31.18  n/a     .000
R0050:C00050------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:S_N7       38743.00  102.892 No_date   43:46   31.18  n/a     .000
      fname :H_SN7
      remark:flow at S_N7: N7 + SW_7
# Insertion of a reservoir to simulate the effects of the Richmond Fen.
# Storage area and volumes were estimated from available topo maps.
# Release rate from fen was assumed to be controlled by the downstream
# river cross-section for summer conditions.  It is was assumed that for up to
# 0.75 m of water, the main channel of the river provided the storage.  Above
# this depth, the wetland starts to signigicantly store water.
#
R0050:C00051------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:S_N7       38743.00  102.892 No_date   43:46   31.18  n/a     .000
                 out <=   1.0 01:RES_RF     38743.00   52.029 No_date   59:07   31.18  n/a     .000
     {MxStoUsed=.4394E+03  m3}
R0050:C00052------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:RES_RF     38743.00   52.029 No_date   59:07   31.18  n/a     .000
      fname :H_ResRF
      remark:outflow of Richmond Fen
#
# Sum of hydrographs from Node 7 routed to Node 6
# Section 5
#
R0050:C00053------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:RES_RF     38743.00   52.029 No_date   59:07   31.18  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N6         38743.00   51.784 No_date   60:27   31.18  n/a     .000
      [L/S/n= 3056./ .082/.025]
      {Vmax=  .538:Dmax= 1.253}
#
# Addition of Subwatershed 6 and Van Gaal Drain to Node 6
#
R0050:C00054------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N6         38743.00   51.784 No_date   60:27   31.18  n/a     .000
                     +    1.0 02:SW_6         165.00    1.285 No_date   33:02   32.44  n/a     .000
                     +    1.0 02:VG_DR       1332.00    9.332 No_date   35:12   36.85  n/a     .000
                  SUM=    1.0 01:S_N6       40240.01   51.810 No_date   60:20   31.37  n/a     .000
#
# Sum of hydrographs from Node 6 routed to Node 5
# Section 6
#
R0050:C00055------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N6       40240.01   51.810 No_date   60:20   31.37  n/a     .000
```

```
      [RDT= 1.00] out<-    1.0 01:N5         40240.01   51.693 No_date   61:06   31.37  n/a     .000
       [L/S/n= 1852./ .054/.035]
       {Vmax=  .469:Dmax= 1.351}
#
# Addition of Subwatershed 5 and Flowing Creek to Node 5
#
R0050:C00056------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:N5         40240.01   51.693 No_date   61:06   31.37  n/a     .000
                     +     1.0 02:SW_5         224.00    8.187 No_date   28:45   41.51  n/a     .000
                     +     1.0 02:FL_CK       4945.00   44.623 No_date   33:18   38.37  n/a     .000
                  SUM=     1.0 01:S_N5       45409.01   71.514 No_date   34:20   32.18  n/a     .000
#
# Sum of hydrographs from Node 5 routed to Node 5A
# Section 7
#
R0050:C00057------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->     1.0 02:S_N5       45409.01   71.514 No_date   34:20   32.18  n/a     .000
      [RDT= 1.00] out<-    1.0 01:N5A        45409.01   71.311 No_date   34:15   32.18  n/a     .000
       [L/S/n=  556./ .090/.040]
       {Vmax=  .530:Dmax= 1.290}
#
# Addition of Subwatershed 5A1 and Subwatershed 5A2 to Node 5A
#
R0050:C00058------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:N5A        45409.01   71.311 No_date   34:15   32.18  n/a     .000
                     +     1.0 02:SW_5A2        20.00     .943 No_date   28:35   45.60  n/a     .000
                     +     1.0 02:SW_5A1      1412.00    8.794 No_date   37:48   39.93  n/a     .000
                  SUM=     1.0 01:S_N5A      46841.01   79.247 No_date   34:46   32.42  n/a     .000
#
# Sum of hydrographs from Node 5A routed to Node 4
# Section 8
#
R0050:C00059------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->     1.0 02:S_N5A      46841.01   79.247 No_date   34:46   32.42  n/a     .000
      [RDT= 1.00] out<-    1.0 01:N4         46841.01   75.833 No_date   36:02   32.42  n/a     .000
       [L/S/n= 4630./ .043/.035]
       {Vmax=  .874:Dmax= 3.702}
#
# Addition of Subwatershed 4 and Leamy Creek to Node 4
#
R0050:C00060------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:N4         46841.01   75.833 No_date   36:02   32.42  n/a     .000
                     +     1.0 02:SW_4         585.00   12.896 No_date   29:55   45.60  n/a     .000
                     +     1.0 02:LM_CK       1021.00   17.059 No_date   30:46   44.77  n/a     .000
                  SUM=     1.0 01:S_N4       48447.00   84.908 No_date   35:20   32.84  n/a     .000
R0050:C00061------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD               1.0 01:S_N4       48447.00   84.908 No_date   35:20   32.84  n/a     .000
       fname :S_N4.0050
       remark:flow at S_N4
#
# Sum of hydrographs from Node 4 routed to Node 2
# Section 9
#
R0050:C00062------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->     1.0 02:S_N4       48447.00   84.908 No_date   35:20   32.84  n/a     .000
      [RDT= 1.00] out<-    1.0 01:N2         48447.00   84.582 No_date   35:30   32.84  n/a     .000
       [L/S/n= 1667./ .060/.040]
       {Vmax=  .909:Dmax= 3.749}
#
# Addition of Subwatershed 2 with Monohan Drain and Smith Drain to Node 2
#
R0050:C00063------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:N2         48447.00   84.582 No_date   35:30   32.84  n/a     .000
                     +     1.0 02:SW_2         177.00    6.469 No_date   28:45   41.51  n/a     .000
                     +     1.0 02:SM_DR       1122.00   15.544 No_date   31:43   45.60  n/a     .000
                     +     1.0 02:MO_DR       2737.00   34.946 No_date   31:29   40.72  n/a     .000
                  SUM=     1.0 01:S_N2       52483.00  124.249 No_date   32:52   33.56  n/a     .000
R0050:C00064------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD               1.0 01:S_N2       52483.00  124.249 No_date   32:52   33.56  n/a     .000
       fname :H_SN2
       remark:flow at S_N2 Jock River Gauge at Moodie Dr.
#
# Sum of hydrographs from Node 2 routed to Node 1
# Section 10
#
#****************************************************************************
#
# Hydrograph from Node 2 routed to Node 416
# Channel X-Section obtained from RVCA Hydraulic Model - Station 9025
#
R0050:C00065------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->     1.0 02:S_N2       52483.00  124.249 No_date   32:52   33.56  n/a     .000
      [RDT= 1.00] out<-    1.0 01:N_416      52483.00  120.589 No_date   33:57   33.56  n/a     .000
       [L/S/n= 2327./ .050/.055]
       {Vmax=  .781:Dmax= 3.561}
#****************************************************************************
#    Catchment SW-1a
#    - Portion of RVCA catchment SW_1 outside of Reach 1 subwatershed
#    - Undeveloped agricultural land
#****************************************************************************
R0050:C00066------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD      1.0 01:SW_1a         536.42    6.175 No_date   31:15   35.39 .434     .000
       [CN= 72.0: N= 3.00: Tp= 2.79]
       [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
       [InterEventTime=  12.00]
R0050:C00067------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD      1.0 01:S-1-Okeefe     44.93    1.231 No_date   29:06   39.91 .490     .000
       [CN= 77.0: N= 3.00: Tp= 1.05]
       [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
       [InterEventTime=  12.00]
R0050:C00068------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:N_416      52483.00  120.589 No_date   33:57   33.56  n/a     .000
                     +     1.0 02:SW_1a         536.42    6.175 No_date   31:15   35.39  n/a     .000
                     +     1.0 02:S-1-Okeefe     44.93    1.231 No_date   29:06   39.91  n/a     .000
                  SUM=     1.0 01:SN_416     53064.36  125.484 No_date   33:19   33.58  n/a     .000
R0050:C00069------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD               1.0 01:SN_416     53064.36  125.484 No_date   33:19   33.58  n/a     .000
       fname :SN_416.0050
       remark:Total Flows at Highway 416
#
# Hydrograph from Node 416 routed to Node at Okeefe drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 7245
#
R0050:C00070------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->     1.0 02:SN_416     53064.36  125.484 No_date   33:19   33.58  n/a     .000
      [RDT= 1.00] out<-    1.0 01:N_OK       53064.36  125.374 No_date   33:43   33.58  n/a     .000
       [L/S/n=  497./ .302/.055]
       {Vmax= 1.649:Dmax= 3.038}
#****************************************************************************
#    Catchment OKEEFE
#    - To O'Keefe drain (north of the Jock)
#    - Developed with assumed 43% imp.
#    - 2020-12-01 add Okeefe model (Area 513.02 HA) instead of current Okeefe (Area 513.02 HA)
#    - 2020-11-20 Okeefe detailed model was added as per the NOVATECH SWMHYMO model (Citi-Gate 2014).
#****************************************************************************
R0050:C00071------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD      1.0 01:O-1            63.72    1.147 No_date   28:58   26.31 .323     .000
       [CN= 61.0: N= 3.00: Tp=  .90]
       [IaREC= 4.00: SMIN= 64.50: SMAX=430.01: SK= .010]
       [InterEventTime=  12.00]
R0050:C00072------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->     1.0 02:O-1            63.72    1.147 No_date   28:58   26.31  n/a     .000
      [RDT= 1.00] out<-    1.0 01:O-1R           63.72    1.084 No_date   29:14   26.31  n/a     .000
       [L/S/n=  960./ .630/.043]
       {Vmax=  .880:Dmax=  .445}
R0050:C00073------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD      1.0 01:O-2            28.61     .404 No_date   29:13   24.30 .298     .000
       [CN= 57.0: N= 3.00: Tp= 1.10]
       [IaREC= 4.00: SMIN= 76.32: SMAX=508.81: SK= .010]
       [InterEventTime=  12.00]
R0050:C00074------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD      1.0 01:O-4            46.94     .531 No_date   29:00   18.55 .228     .000
       [CN= 49.0: N= 3.00: Tp=  .90]
       [IaREC= 4.00: SMIN=104.59: SMAX=697.25: SK= .010]
       [InterEventTime=  12.00]
R0050:C00075------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:O-1R           63.72    1.084 No_date   29:14   26.31  n/a     .000
                     +     1.0 02:O-2            28.61     .404 No_date   29:13   24.30  n/a     .000
                     +     1.0 02:O-4            46.94     .531 No_date   29:00   18.55  n/a     .000
                  SUM=     1.0 01:OKF-N         139.27    2.005 No_date   29:11   23.28  n/a     .000
R0050:C00076------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->     1.0 02:OKF-N         139.27    2.005 No_date   29:11   23.28  n/a     .000
      [RDT= 1.00] out<-    1.0 01:OKF-NR        139.27    2.004 No_date   29:13   23.28  n/a     .000
       [L/S/n=  210./ .810/.043]
       {Vmax= 1.081:Dmax=  .751}
R0050:C00077------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD      1.0 01:O-6            16.46     .179 No_date   28:45   15.94 .196     .000
       [CN= 43.0: N= 3.00: Tp=  .70]
       [IaREC= 4.00: SMIN=134.47: SMAX=896.47: SK= .010]
       [InterEventTime=  12.00]
R0050:C00078------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD    1.0 01:O-3            39.67    1.212 No_date   28:22   28.54 .350     .000
       [XIMP=.15:TIMP=.30]
       [LOSS= 2 :CN= 50.0]
       [Pervious     area: IAper= 4.67:SLPP= .32:LGP= 440.:MNP=.035:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .32:LGI=1880.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 99.77: SMAX=665.12: SK= .010]
R0050:C00079------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD    1.0 01:O-5            60.63    3.085 No_date   28:10   32.89 .403     .000
       [XIMP=.13:TIMP=.26]
       [LOSS= 2 :CN= 61.0]
       [Pervious     area: IAper= 4.67:SLPP=1.38:LGP= 550.:MNP=.035:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI=1.38:LGI=1450.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 64.50: SMAX=430.01: SK= .010]
R0050:C00080------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:OKF-NR        139.27    2.004 No_date   29:13   23.28  n/a     .000
                     +     1.0 02:O-3            39.67    1.212 No_date   28:22   28.54  n/a     .000
                     +     1.0 02:O-5            60.63    3.085 No_date   28:10   32.89  n/a     .000
                     +     1.0 02:O-6            16.46     .179 No_date   28:45   15.94  n/a     .000
                  SUM=     1.0 01:PT1           256.03    4.968 No_date   28:20   25.90  n/a     .000
R0050:C00081------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD      1.0 01:O-7             5.28     .096 No_date   28:37   21.46 .263     .000
       [CN= 54.0: N= 3.00: Tp=  .60]
       [IaREC= 4.00: SMIN= 87.01: SMAX=580.07: SK= .010]
       [InterEventTime=  12.00]
R0050:C00082------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:PT1           256.03    4.968 No_date   28:20   25.90  n/a     .000
                     +     1.0 02:O-7             5.28     .096 No_date   28:37   21.46  n/a     .000
                  SUM=     1.0 01:FF            261.31    5.051 No_date   28:20   25.81  n/a     .000
R0050:C00083------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->     1.0 02:FF            261.31    5.051 No_date   28:20   25.81  n/a     .000
      [RDT= 1.00] out<-    1.0 01:DRAIN1        261.31    4.883 No_date   28:25   25.81  n/a     .000
       [L/S/n=  302./1.000/.043]
       {Vmax=  .822:Dmax=  .759}
R0050:C00084------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD      1.0 01:D1              1.17     .094 No_date   28:12   43.70 .536     .000
       [CN= 84.0: N= 3.00: Tp=  .28]
       [IaREC= 4.00: SMIN= 21.09: SMAX=140.62: SK= .010]
       [InterEventTime=  12.00]
R0050:C00085------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD    1.0 01:A1              2.50     .517 No_date   28:01   64.42 .790     .000
       [XIMP=.68:TIMP=.85]
       [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
       [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 224.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00086------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->     1.0 02:A1              2.50     .517 No_date   28:01   64.42  n/a     .000
                out <=     1.0 01:A1-STR          2.50     .146 No_date   28:19   64.42  n/a     .000
           overflow <=     1.0 03:A1-OVF           .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.7243E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00087------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD    1.0 01:ST-2             .59     .103 No_date   28:00   50.67 .622     .000
       [XIMP=.46:TIMP=.57]
       [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
       [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 109.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00088------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->     1.0 02:ST-2             .59     .103 No_date   28:00   50.67  n/a     .000
                out <=     1.0 01:ST2STR           .59     .052 No_date   28:11   50.67  n/a     .000
           overflow <=     1.0 03:ST2OVF           .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.3952E-02  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00089------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD      1.0 01:O-8            60.55    1.383 No_date   29:04   33.66 .413     .000
       [CN= 69.0: N= 3.00: Tp= 1.00]
       [IaREC= 4.00: SMIN= 44.82: SMAX=298.82: SK= .010]
       [InterEventTime=  12.00]
R0050:C00090------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->     1.0 02:O-8            60.55    1.383 No_date   29:04   33.66  n/a     .000
      [RDT= 1.00] out<-    1.0 01:O8PIPE         60.55    1.376 No_date   29:07   33.66  n/a     .000
       [L/S/n=  335./ .100/.013]
       {Vmax= 1.244:Dmax=  .617}
       {HGTH= 1.20:WDTH= 1.80}
R0050:C00091------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:DRAIN1        261.31    4.883 No_date   28:25   25.81  n/a     .000
                     +     1.0 02:D1              1.17     .094 No_date   28:12   43.70  n/a     .000
                     +     1.0 02:A1-STR          2.50     .146 No_date   28:19   64.42  n/a     .000
                     +     1.0 02:A1-OVF           .00     .000 No_date    0:00     .00  n/a     .000
                     +     1.0 02:ST2STR           .59     .052 No_date   28:11   50.67  n/a     .000
                     +     1.0 02:ST2OVF           .00     .000 No_date    0:00     .00  n/a     .000
                     +     1.0 02:O8PIPE         60.55    1.376 No_date   29:07   33.66  n/a     .000
                  SUM=     1.0 01:ST2-IN        326.12    6.061 No_date   28:35   27.67  n/a     .000
R0050:C00092------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD    1.0 01:A7              3.51     .704 No_date   28:01   64.42 .790     .000
       [XIMP=.68:TIMP=.85]
       [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
       [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 265.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00093------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->     1.0 02:A7              3.51     .704 No_date   28:01   64.42  n/a     .000
                out <=     1.0 01:A7-STR          3.51     .199 No_date   28:21   64.42  n/a     .000
           overflow <=     1.0 03:A7-OVF           .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.1019E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00094------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD    1.0 01:ST-3             .71     .123 No_date   28:00   50.67 .622     .000
       [XIMP=.46:TIMP=.57]
       [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
       [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 119.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00095------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->     1.0 02:ST-3             .71     .123 No_date   28:00   50.67  n/a     .000
                out <=     1.0 01:ST3STR           .71     .063 No_date   28:11   50.67  n/a     .000
           overflow <=     1.0 03:ST3OVF           .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.4527E-02  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00096------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:ST2-IN        326.12    6.061 No_date   28:35   27.67  n/a     .000
                     +     1.0 02:A7-STR          3.51     .199 No_date   28:21   64.42  n/a     .000
                     +     1.0 02:A7-OVF           .00     .000 No_date    0:00     .00  n/a     .000
                     +     1.0 02:ST3STR           .71     .063 No_date   28:11   50.67  n/a     .000
                     +     1.0 02:ST3OVF           .00     .000 No_date    0:00     .00  n/a     .000
                  SUM=     1.0 01:PT2ST3        330.34    6.299 No_date   28:33   28.11  n/a     .000
R0050:C00097------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->     1.0 02:PT2ST3        330.34    6.299 No_date   28:33   28.11  n/a     .000
      [RDT= 1.00] out<-    1.0 01:DRAIN2        330.34    5.789 No_date   28:58   28.11  n/a     .000
       [L/S/n=  592./ .230/.043]
       {Vmax=  .593:Dmax= 1.152}
R0050:C00098------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD      1.0 01:D2              2.28     .074 No_date   29:02   43.70 .536     .000
       [CN= 84.0: N= 3.00: Tp=  .99]
       [IaREC= 4.00: SMIN= 21.09: SMAX=140.62: SK= .010]
       [InterEventTime=  12.00]
R0050:C00099------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD    1.0 01:A17            12.04    2.163 No_date   28:03   64.42 .790     .000
       [XIMP=.68:TIMP=.85]
       [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
       [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 491.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00100------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->     1.0 02:A17            12.04    2.163 No_date   28:03   64.42  n/a     .000
                out <=     1.0 01:A17STR         12.04     .654 No_date   28:27   64.42  n/a     .000
           overflow <=     1.0 03:A17OVF           .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.3445E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00101------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD    1.0 01:ST-4             .35     .063 No_date   28:00   50.67 .622     .000
       [XIMP=.46:TIMP=.57]
       [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
       [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=  84.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00102------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->     1.0 02:ST-4             .35     .063 No_date   28:00   50.67  n/a     .000
                out <=     1.0 01:ST4STR           .35     .031 No_date   28:10   50.67  n/a     .000
           overflow <=     1.0 03:ST4OVF           .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.2719E-02  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00103------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD    1.0 01:A18             5.30    1.036 No_date   28:01   64.42 .790     .000
       [XIMP=.68:TIMP=.85]
       [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
       [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 326.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00104------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->     1.0 02:A18             5.30    1.036 No_date   28:01   64.42  n/a     .000
                out <=     1.0 01:A18STR          5.30     .300 No_date   28:22   64.42  n/a     .000
           overflow <=     1.0 03:A18OVF           .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.1532E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00105------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:DRAIN2        330.34    5.789 No_date   28:58   28.11  n/a     .000
                     +     1.0 02:D2              2.28     .074 No_date   29:02   43.70  n/a     .000
                     +     1.0 02:A17STR         12.04     .654 No_date   28:27   64.42  n/a     .000
                     +     1.0 02:A17OVF           .00     .000 No_date    0:00     .00  n/a     .000
                     +     1.0 02:ST4STR           .35     .031 No_date   28:10   50.67  n/a     .000
                     +     1.0 02:ST4OVF           .00     .000 No_date    0:00     .00  n/a     .000
                     +     1.0 02:A18STR          5.30     .300 No_date   28:22   64.42  n/a     .000
                     +     1.0 02:A18OVF           .00     .000 No_date    0:00     .00  n/a     .000
                  SUM=     1.0 01:PT3ST4        350.31    6.632 No_date   28:55   30.03  n/a     .000
R0050:C00106------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->     1.0 02:PT3ST4        350.31    6.632 No_date   28:55   30.03  n/a     .000
      [RDT= 1.00] out<-    1.0 01:DRAIN3        350.31    6.350 No_date   29:11   30.03  n/a     .000
       [L/S/n=  525./ .230/.043]
       {Vmax=  .613:Dmax= 1.197}
R0050:C00107------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD      1.0 01:D3              2.51     .113 No_date   28:43   47.27 .580     .000
       [CN= 86.0: N= 3.00: Tp=  .73]
       [IaREC= 4.00: SMIN= 17.43: SMAX=116.21: SK= .010]
       [InterEventTime=  12.00]
R0050:C00108------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD    1.0 01:C1              3.41     .690 No_date   28:01   64.42 .790     .000
       [XIMP=.68:TIMP=.85]
       [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
       [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 261.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00109------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->     1.0 02:C1              3.41     .690 No_date   28:01   64.42  n/a     .000
                out <=     1.0 01:C1-STR          3.41     .194 No_date   28:20   64.42  n/a     .000
           overflow <=     1.0 03:C1-OVF           .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.9900E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00110------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD    1.0 01:ST-5             .45     .079 No_date   28:00   50.67 .622     .000
       [XIMP=.46:TIMP=.57]
       [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
       [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=  95.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00111------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->     1.0 02:ST-5             .45     .079 No_date   28:00   50.67  n/a     .000
                out <=     1.0 01:ST5STR           .45     .040 No_date   28:10   50.67  n/a     .000
           overflow <=     1.0 03:ST5OVF           .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.3164E-02  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00112------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:DRAIN3        350.31    6.350 No_date   29:11   30.03  n/a     .000
                     +     1.0 02:D3              2.51     .113 No_date   28:43   47.27  n/a     .000
                     +     1.0 02:C1-STR          3.41     .194 No_date   28:20   64.42  n/a     .000
                     +     1.0 02:C1-OVF           .00     .000 No_date    0:00     .00  n/a     .000
                     +     1.0 02:ST5STR           .45     .040 No_date   28:10   50.67  n/a     .000
                     +     1.0 02:ST5OVF           .00     .000 No_date    0:00     .00  n/a     .000
                  SUM=     1.0 01:ST5-E         356.68    6.575 No_date   29:09   30.51  n/a     .000
```

```
R0050:C00113-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:STRAND         7.59    1.038 No_date   28:09   62.95 .772     .000
      [XIMP=.64:TIMP=.85]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1230.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00114-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:STRAND         7.59    1.038 No_date   28:09   62.95  n/a     .000
                out <=    1.0 01:S-POND         7.59     .137 No_date   29:13   62.95  n/a     .000
           overflow <=    1.0 03:S-OVF           .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.3159E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00115-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:ST5-E        356.68    6.575 No_date   29:09   30.51  n/a     .000
                    +     1.0 02:S-POND         7.59     .137 No_date   29:13   62.95  n/a     .000
                    +     1.0 02:S-OVF           .00     .000 No_date    0:00     .00  n/a     .000
                 SUM=     1.0 01:SSAOUT       364.27    6.711 No_date   29:09   31.19  n/a     .000
R0050:C00116-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SSAOUT       364.27    6.711 No_date   29:09   31.19  n/a     .000
      fname :SSAOUT.0050
      remark:SSAOUT
R0050:C00117-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:Area-A        66.75    8.917 No_date   28:08   61.83 .759     .000
      [XIMP=.64:TIMP=.80]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1155.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00118-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:Area-A        66.75    8.917 No_date   28:08   61.83  n/a     .000
      fname :Area-A.0050
      remark:SMWF-A Inflow
R0050:C00119-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:Area-A        66.75    8.917 No_date   28:08   61.83  n/a     .000
                out <=    1.0 01:SWMF-A        66.75    1.070 No_date   29:16   61.83  n/a     .000
           overflow <=    1.0 03:SWMAOV          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.2845E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00120-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SWMF-A        66.75    1.070 No_date   29:16   61.83  n/a     .000
      fname :SWMF-A.0050
      remark:SMWF-A Outflow
R0050:C00121-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:SSAOUT       364.27    6.711 No_date   29:09   31.19  n/a     .000
                    +     1.0 02:SWMF-A        66.75    1.070 No_date   29:16   61.83  n/a     .000
                    +     1.0 02:SWMAOV          .00     .000 No_date    0:00     .00  n/a     .000
                 SUM=     1.0 01:PT4ST5       431.02    7.776 No_date   29:10   35.93  n/a     .000
R0050:C00122-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:C6             1.87     .395 No_date   28:01   64.42 .790     .000
      [XIMP=.68:TIMP=.85]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 193.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00123-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:C6             1.87     .395 No_date   28:01   64.42  n/a     .000
                out <=    1.0 01:C6-STR         1.87     .110 No_date   28:18   64.42  n/a     .000
           overflow <=    1.0 03:C6-OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.5452E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00124-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:C7             1.62     .347 No_date   28:00   64.42 .790     .000
      [XIMP=.68:TIMP=.85]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 180.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00125-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:C7             1.62     .347 No_date   28:00   64.42  n/a     .000
                out <=    1.0 01:C7-STR         1.62     .096 No_date   28:17   64.42  n/a     .000
           overflow <=    1.0 03:C7-OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.4698E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00126-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:ST-6            .41     .073 No_date   28:00   50.67 .622     .000
      [XIMP=.46:TIMP=.57]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=  91.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00127-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:ST-6            .41     .073 No_date   28:00   50.67  n/a     .000
                out <=    1.0 01:ST6STR          .41     .036 No_date   28:10   50.67  n/a     .000
           overflow <=    1.0 03:ST6OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.3103E-02  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00128-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:PT4ST5       431.02    7.776 No_date   29:10   35.93  n/a     .000
                    +     1.0 02:C6-STR         1.87     .110 No_date   28:18   64.42  n/a     .000
                    +     1.0 02:C6-OVF          .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:C7-STR         1.62     .096 No_date   28:17   64.42  n/a     .000
                    +     1.0 02:C7-OVF          .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:ST6STR          .41     .036 No_date   28:10   50.67  n/a     .000
                    +     1.0 02:ST6OVF          .00     .000 No_date    0:00     .00  n/a     .000
                 SUM=     1.0 01:PT5ST6       434.92    7.904 No_date   29:09   36.17  n/a     .000
R0050:C00129-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:PT5ST6       434.92    7.904 No_date   29:09   36.17  n/a     .000
     [RDT= 1.00] out<-    1.0 01:DRAIN4       434.92    7.615 No_date   29:20   36.17  n/a     .000
      [L/S/n=  324./ .100/.043]
      {Vmax=  .490:Dmax= 1.531}
R0050:C00130-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:D4             1.73     .097 No_date   28:34   50.14 .615     .000
      [CN= 88.0: N= 3.00: Tp=  .60]
      [IaREC= 4.00: SMIN= 14.94: SMAX= 99.61: SK= .010]
      [InterEventTime=  12.00]
R0050:C00131-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:Area-B        24.04    4.418 No_date   28:02   60.51 .742     .000
      [XIMP=.62:TIMP=.77]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=1.40:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.40:LGI= 693.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00132-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:Area-B        24.04    4.418 No_date   28:02   60.51  n/a     .000
                out <=    1.0 01:SWMF-B        24.04     .566 No_date   28:42   60.51  n/a     .000
           overflow <=    1.0 03:SWMBOVF         .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.8944E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00133-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:DRAIN4       434.92    7.615 No_date   29:20   36.17  n/a     .000
                    +     1.0 02:D4             1.73     .097 No_date   28:34   50.14  n/a     .000
                    +     1.0 02:SWMF-B        24.04     .566 No_date   28:42   60.51  n/a     .000
                    +     1.0 02:SWMBOVF         .00     .000 No_date    0:00     .00  n/a     .000
                 SUM=     1.0 01:D4-EX        460.69    8.190 No_date   29:19   37.49  n/a     .000
R0050:C00134-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:D4-EX        460.69    8.190 No_date   29:19   37.49  n/a     .000
     [RDT= 1.00] out<-    1.0 01:DRAIN5       460.69    8.038 No_date   29:27   37.49  n/a     .000
      [L/S/n=  413./ .160/.033]
      {Vmax=  .675:Dmax= 1.051}
R0050:C00135-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:D5             1.90     .089 No_date   28:40   47.27 .580     .000
      [CN= 86.0: N= 3.00: Tp=  .69]
      [IaREC= 4.00: SMIN= 17.43: SMAX=116.21: SK= .010]
      [InterEventTime=  12.00]
R0050:C00136-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:O-13SDF        9.74     .578 No_date   28:21   44.42 .545     .000
      [CN= 81.0: N= 3.00: Tp=  .43]
      [IaREC= 4.00: SMIN= 25.21: SMAX=168.09: SK= .010]
      [InterEventTime=  12.00]
R0050:C00137-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:O-13SDF        9.74     .578 No_date   28:21   44.42  n/a     .000
                out <=    1.0 01:SDF            9.74     .061 No_date   30:55   44.42  n/a     .000
           overflow <=    1.0 03:OVFSDF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.2427E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00138-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:DRAIN5       460.69    8.038 No_date   29:27   37.49  n/a     .000
                    +     1.0 02:D5             1.90     .089 No_date   28:40   47.27  n/a     .000
                    +     1.0 02:SDF            9.74     .061 No_date   30:55   44.42  n/a     .000
                 SUM=     1.0 01:PT6MC        472.33    8.151 No_date   29:27   37.68  n/a     .000
R0050:C00139-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:O-15          10.67     .800 No_date   28:13   43.28 .531     .000
      [CN= 82.0: N= 3.00: Tp=  .30]
      [IaREC= 4.00: SMIN= 23.09: SMAX=153.94: SK= .010]
      [InterEventTime=  12.00]
R0050:C00140-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:PT6MC        472.33    8.151 No_date   29:27   37.68  n/a     .000
                    +     1.0 02:O-15          10.67     .800 No_date   28:13   43.28  n/a     .000
                 SUM=     1.0 01:M-C          483.00    8.281 No_date   29:26   37.80  n/a     .000
R0050:C00141-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:M-C          483.00    8.281 No_date   29:26   37.80  n/a     .000
     [RDT= 1.00] out<-    1.0 01:O-14Ch       483.00    7.494 No_date   29:58   37.80  n/a     .000
      [L/S/n=  845./ .100/.033]
      {Vmax=  .549:Dmax= 1.780}
R0050:C00142-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:O-14           5.00     .616 No_date   28:04   43.28 .531     .000
      [CN= 82.0: N= 3.00: Tp=  .13]
      [IaREC= 4.00: SMIN= 23.09: SMAX=153.94: SK= .010]
      [InterEventTime=  12.00]
R0050:C00143-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:O-14Ch       483.00    7.494 No_date   29:58   37.80  n/a     .000
                    +     1.0 02:O-14           5.00     .616 No_date   28:04   43.28  n/a     .000
                 SUM=     1.0 01:OKEEFE       488.00    7.533 No_date   29:58   37.86  n/a     .000
#**************************************************************************
#    Okeefe Pond
#    - Rating curve obtained assuming 40m3/ha in 24 hours for quality control
#      and a ratio of the catchment area to the West Clarke pond rating curve
#      from the MSS for the next coordinates
#**************************************************************************
R0050:C00144-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:S-1-D2        18.67     .488 No_date   29:12   39.91 .490     .000
      [CN= 77.0: N= 3.00: Tp= 1.12]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0050:C00145-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:S-1-D3         6.79     .161 No_date   29:23   39.91 .490     .000
      [CN= 77.0: N= 3.00: Tp= 1.28]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0050:C00146-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N_OK       53064.36  125.374 No_date   33:43   33.58  n/a     .000
                    +     1.0 02:OKEEFE       488.00    7.533 No_date   29:58   37.86  n/a     .000
                    +     1.0 02:S-1-D2        18.67     .488 No_date   29:12   39.91  n/a     .000
                    +     1.0 02:S-1-D3         6.79     .161 No_date   29:23   39.91  n/a     .000
                 SUM=     1.0 01:SN_OK      53577.82  128.132 No_date   33:19   33.62  n/a     .000
R0050:C00147-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_OK      53577.82  128.132 No_date   33:19   33.62  n/a     .000
      fname :SN_OK.0050
      remark:Total Flows at Okeefe Drain
#
# Hydrograph from Node Okeefe routed to Node at Foster Drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 6215
#
R0050:C00148-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_OK      53577.82  128.132 No_date   33:19   33.62  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N_FO       53577.82  127.740 No_date   33:20   33.62  n/a     .000
      [L/S/n= 1183./ .076/.035]
      {Vmax= 1.239:Dmax= 3.375}
#**************************************************************************
#    Catchment FOSTER
#    - To Foster ditch (north of the Jock)
#    - Partially developed (medium density); remaining agricultural
#    - 2020-12-01 JFSA Foster area is 332 as per Foster SWMF Environmental Study Report, CH2MHILL, Aug 2013.
#    - 2020-12-01 decrease Foster drainage area from (373 HA) to (307.98 HA) after increasing Okeefe drainage area to (5
#    - 2021-02-12  update Foster area to 325.44 ha as measured from QGIS
#**************************************************************************
R0050:C00149-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:FOSTER       325.44   32.213 No_date   28:11   58.69 .720     .000
      [XIMP=.55:TIMP=.55]
      [LOSS= 2 :CN= 74.0]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1473.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 36.67: SMAX=244.49: SK= .010]
#**************************************************************************
#    Foster Pond
#    - Rating curve obtained assuming 40m3/ha in 24 hours for quality control
#      and a ratio of the catchment area to the West Clarke pond rating curve
#      from the MSS for the next coordinates
#**************************************************************************
R0050:C00150-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:FOSTER       325.44   32.213 No_date   28:11   58.69  n/a     .000
                out <=    1.0 01:P_FOS        325.44    8.155 No_date   29:03   58.69  n/a     .000
           overflow <=    1.0 03:FO-OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.7887E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00151-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:P_FOS        325.44    8.155 No_date   29:03   58.69  n/a     .000
                    +     1.0 02:FO-OVF          .00     .000 No_date    0:00     .00  n/a     .000
                 SUM=     1.0 01:FOSTER-OUT   325.44    8.155 No_date   29:03   58.69  n/a     .000
#**************************************************************************
R0050:C00152-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:W_CLAR_BRA    73.29   10.462 No_date   28:05   63.49 .779     .000
      [XIMP=.60:TIMP=.65]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 699.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0050:C00153-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:W_CLAR_BRA    73.29   10.462 No_date   28:05   63.49  n/a     .000
                out <=    1.0 01:MS_P10        73.29    1.204 No_date   29:09   63.49  n/a     .000
           overflow <=    1.0 03:P10-OVF         .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.1950E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00154-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:S-1-FO-D2      4.94     .131 No_date   29:10   39.91 .490     .000
      [CN= 77.0: N= 3.00: Tp= 1.10]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0050:C00155-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:FOSTER-OUT   325.44    8.155 No_date   29:03   58.69  n/a     .000
                    +     1.0 02:S-1-FO-D2      4.94     .131 No_date   29:10   39.91  n/a     .000
                 SUM=     1.0 01:980          330.38    8.285 No_date   29:03   58.41  n/a     .000
R0050:C00156-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:980          330.38    8.285 No_date   29:03   58.41  n/a     .000
      fname :980.0050
      remark:Total Flows at Station 980 on Foster Drain
#
# Hydrograph from Node Foster SWM (Station 980)to Node at station 520
# Channel X-Section obtained from RVCA Hydraulic Model - Station 980
#
R0050:C00157-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:980          330.38    8.285 No_date   29:03   58.41  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:980-out      330.38    7.901 No_date   29:23   58.41  n/a     .000
      [L/S/n=  460./ .043/.035]
      {Vmax=  .590:Dmax= 1.605}
R0050:C00158-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:S-1-FO-D1      5.11     .135 No_date   29:10   39.91 .490     .000
      [CN= 77.0: N= 3.00: Tp= 1.10]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0050:C00159-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:980-out      330.38    7.901 No_date   29:23   58.41  n/a     .000
                    +     1.0 02:S-1-FO-D1      5.11     .135 No_date   29:10   39.91  n/a     .000
                 SUM=     1.0 01:520          335.49    8.034 No_date   29:23   58.13  n/a     .000
R0050:C00160-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:520          335.49    8.034 No_date   29:23   58.13  n/a     .000
      fname :520.0050
      remark:Total Flows at Sation 520 on Foster Drain
# Hydrograph from Node at Station 520 (Foster Drain) to Node at station 6016 (Jock River)
# Channel X-Section obtained from RVCA Hydraulic Model - Station 520
#
R0050:C00161-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:520          335.49    8.034 No_date   29:23   58.13  n/a     .000
     [RDT= 1.00] out<-    1.0 01:520-out      335.49    7.994 No_date   29:28   58.13  n/a     .000
      [L/S/n=  860./ .587/.035]
      {Vmax= 1.541:Dmax=  .767}
R0050:C00162-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:S-1-FO-F-D    14.96     .422 No_date   29:03   39.91 .490     .000
      [CN= 77.0: N= 3.00: Tp= 1.01]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0050:C00163-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-D8         5.27    1.023 No_date   28:00   63.95 .785     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .75:LGI= 187.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0050:C00164-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:S-1-A         75.88    3.042 No_date   28:36   39.91 .490     .000
      [CN= 77.0: N= 3.00: Tp=  .62]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0050:C00165-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:W_CLAR_UND    35.65     .943 No_date   29:10   39.91 .490     .000
      [CN= 77.0: N= 3.00: Tp= 1.10]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0050:C00166-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N_FO       53577.82  127.740 No_date   33:20   33.62  n/a     .000
                    +     1.0 02:520-out      335.49    7.994 No_date   29:28   58.13  n/a     .000
                    +     1.0 02:MS_P10        73.29    1.204 No_date   29:09   63.49  n/a     .000
                    +     1.0 02:P10-OVF         .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:W_CLAR_UND    35.65     .943 No_date   29:10   39.91  n/a     .000
                    +     1.0 02:S-1-FO-F-D    14.96     .422 No_date   29:03   39.91  n/a     .000
                    +     1.0 02:S-1-D8         5.27    1.023 No_date   28:00   63.95  n/a     .000
                    +     1.0 02:S-1-A         75.88    3.042 No_date   28:36   39.91  n/a     .000
                 SUM=     1.0 01:SN_FO      54118.36  132.970 No_date   33:19   33.83  n/a     .000
R0050:C00167-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_FO      54118.36  132.970 No_date   33:19   33.83  n/a     .000
      fname :SN_FO.0050
      remark:Total Flows at Foster Drain
# Hydrograph from Node Foster routed to Node at Cedarview Road
# Channel X-Section obtained from RVCA Hydraulic Model - Station 6016
#
R0050:C00168-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_FO      54118.36  132.970 No_date   33:19   33.83  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:N_CE       54118.36  132.590 No_date   33:34   33.83  n/a     .000
      [L/S/n=  159./ .082/.035]
      {Vmax= 1.439:Dmax= 4.175}
#**************************************************************************
#    Catchment S-1
#    - To Jock River (north and south of Jock)
#    - Primarily agricultural fields; portion of sand quarry
#**************************************************************************
R0050:C00169-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:S-1-B         55.36    2.770 No_date   28:23   39.91 .490     .000
      [CN= 77.0: N= 3.00: Tp=  .45]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
#    -  JFSA 2021-02-24 change the name from S-1-BCDC to S-1-A and S-1-B. Change their TP values based on the new areas
#    -  JFSA 2021-02-24 "S-1-BCDC-1" and "S-1-BCDC-2" are not existing anymore. "S-1-BCDC-1" is part of "S-1-FO-D2" and
#    -  JFSA 2021-01-19, after adding Greenbank pond, "S-1-BCDC-3" is not existing anymore
R0050:C00170-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:S-1-D1        21.67     .587 No_date   29:08   39.91 .490     .000
      [CN= 77.0: N= 3.00: Tp= 1.07]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0050:C00171-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:S-1-D4         3.28     .087 No_date   29:10   39.91 .490     .000
      [CN= 77.0: N= 3.00: Tp= 1.10]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0050:C00172-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:S-1-D5        12.84     .340 No_date   29:10   39.91 .490     .000
      [CN= 77.0: N= 3.00: Tp= 1.10]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0050:C00173-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:S-1-D6         1.75     .046 No_date   29:10   39.91 .490     .000
      [CN= 77.0: N= 3.00: Tp= 1.10]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0050:C00174-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:S-1-D7         2.03     .054 No_date   29:10   39.91 .490     .000
      [CN= 77.0: N= 3.00: Tp= 1.10]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
#    Catchment W_CLAR
```

```
#    - To West Clarke Drain (south of the Jock)
#    - Subdivision with 43% imp. as per Barrhaven South MSS
#    - 2020-11-30 update CLARKE Tributary Drainage Area to  = 121 ha based on P598(04)-11
#    - 2020-11-30 split CLARKE Drainage Area to MAJOR and ALL
#*****************************************************************************
R0050:C00175-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:W_CLAR_MJ      1.77     .319 No_date   28:00   59.44 .729     .000
      [XIMP=.46:TIMP=.59]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 109.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
# 5-Year + 12% Capture
R0050:C00176-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:W_CLAR_MJ      1.77     .319 No_date   28:00   59.44  n/a     .000
                out <=    1.0 01:W_CLAR_MJn     1.70     .213 No_date   27:53   59.44  n/a     .000
           overflow <=    1.0 03:W_CLAR_MJj      .08     .102 No_date   28:01   59.44  n/a     .000
     {MxStoUsed=.1125E-03  m3, TotOvfVol=.4485E-02  m3, N-Ovf=    1, TotDurOvf=    0.hrs}
R0050:C00177-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:W_CLAR_ALL   119.40   17.358 No_date   28:04   63.49 .779     .000
      [XIMP=.60:TIMP=.65]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 892.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0050:C00178-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:W_CLAR_ALL   119.40   17.358 No_date   28:04   63.49  n/a     .000
                   +      1.0 02:W_CLAR_MJj      .08     .102 No_date   28:01   59.44  n/a     .000
                 SUM=     1.0 01:W_CLAR       119.47   17.371 No_date   28:04   63.49  n/a     .000
R0050:C00179-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:W_CLAR       119.47   17.371 No_date   28:04   63.49  n/a     .000
      fname :W_CLAR.0050
      remark:Total Flows to West Clarke
#*****************************************************************************
#    West Clarke Pond 2
#    - Rating curve obtained from Barrhaven South MSS modeling
#    - Tributary Drainage Area to MSS Pond 2 = 241 ha
#*****************************************************************************
R0050:C00180-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:W_CLAR       119.47   17.371 No_date   28:04   63.49  n/a     .000
                out <=    1.0 01:MS_P2        119.47   10.246 No_date   28:16   63.49  n/a     .000
           overflow <=    1.0 03:P2-OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.3076E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
#*****************************************************************************
R0050:C00181-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N_CE       54118.36  132.590 No_date   33:34   33.83  n/a     .000
                   +      1.0 02:S-1-D4         3.28     .087 No_date   29:10   39.91  n/a     .000
                   +      1.0 02:S-1-D5        12.84     .340 No_date   29:10   39.91  n/a     .000
                   +      1.0 02:MS_P2        119.47   10.246 No_date   28:16   63.49  n/a     .000
                   +      1.0 02:P2-OVF          .00     .000 No_date    0:00     .00  n/a     .000
                 SUM=     1.0 01:SN_CE      54253.95  133.524 No_date   33:22   33.90  n/a     .000
R0050:C00182-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_CE      54253.95  133.524 No_date   33:22   33.90  n/a     .000
      fname :SN_CE.0050
      remark:Total Flows before Station 5737 on Jock River
# Channel X-Section obtained from RVCA Hydraulic Model - Station 5737
# JFSA 2021-02-25 add station 5737 before station 5002. Station 5737 was extracted from the HEC-RAS model T:\PROJ\1474-1
# JFSA 2021-03-02  change the slope to 0.1% instead of 0.0175 to stabilize the model
R0050:C00183-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_CE      54253.95  133.524 No_date   33:22   33.90  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:5737       54253.95  127.934 No_date   35:32   33.90  n/a     .000
      [L/S/n=  270./ .018/.035]
      {Vmax=  .826:Dmax= 5.268}
R0050:C00184-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:5737       54253.95  127.934 No_date   35:32   33.90  n/a     .000
                   +      1.0 02:S-1-D1        21.67     .587 No_date   29:08   39.91  n/a     .000
                   +      1.0 02:S-1-D6         1.75     .046 No_date   29:10   39.91  n/a     .000
                   +      1.0 02:S-1-D7         2.03     .054 No_date   29:10   39.91  n/a     .000
                 SUM=     1.0 01:5002       54279.41  128.023 No_date   35:32   33.90  n/a     .000
R0050:C00185-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:5002       54279.41  128.023 No_date   35:32   33.90  n/a     .000
      fname :5002.0050
      remark:Total Flows before Station 5002 on Jock River
# Hydrograph from Node Cedarview Road routed to Node at West Clarke Drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 5002
# JFSA 2021-02-19 Change the slope from 0.01 % (as per Stantec Report 2007) to 0.0255 % so the model will be more stable
# JFSA 2021-02-19 Change to three ROUTE CHANNEL with length 275 m each instead of one with 825 m length so the model wil
# JFSA 2021-02-26 change the length of 5002 route channel from 825 m to 736 m. That is because of adding station 5737 be
R0050:C00186-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:5002       54279.41  128.023 No_date   35:32   33.90  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:N_WCa      54279.41  127.998 No_date   35:39   33.90  n/a     .000
      [L/S/n=  245./ .095/.035]
      {Vmax= 1.271:Dmax= 2.986}
R0050:C00187-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:N_WCa      54279.41  127.998 No_date   35:39   33.90  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:N_WCb      54279.41  127.975 No_date   35:46   33.90  n/a     .000
      [L/S/n=  245./ .095/.035]
      {Vmax= 1.271:Dmax= 2.986}
R0050:C00188-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:N_WCb      54279.41  127.975 No_date   35:46   33.90  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:N_WC       54279.41  127.967 No_date   35:50   33.90  n/a     .000
      [L/S/n=  245./ .095/.035]
      {Vmax= 1.271:Dmax= 2.985}
#*****************************************************************************
# Hydrograph from Node West Clarke routed to Node at Kennedy - Burnett Drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 4534
#
R0050:C00189-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:N_WC       54279.41  127.967 No_date   35:50   33.90  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:N_KB       54279.41  127.622 No_date   36:14   33.90  n/a     .000
      [L/S/n= 1020./ .050/.035]
      {Vmax= 1.117:Dmax= 3.767}
#*****************************************************************************
#    Catchment KEN_BU
#    - To Kennedy-Burnett SWM Facility
#    - Outlets to Fraser-Clarke drain (north of the Jock)
#    - Medium density residential subdivision
#*****************************************************************************
#*****************************************************************************
#   Existing Kennedy-Burnett SWM Facility
#    - Rating curve obtained from URTKBP
#    - Tributary Drainage Area to Pond = 160 ha
#*****************************************************************************
R0050:C00190-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-01A        40.82    4.812 No_date   28:10   33.07 .406     .000
      [XIMP=.10:TIMP=.40]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI= .50:LGI= 522.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00191-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-01A        40.82    4.812 No_date   28:10   33.07  n/a     .000
     Major System   /     1.0 02:KB-01A-MJ       .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-01A-MN     40.82    3.600 No_date   28:00   33.14  n/a     .000
      {MjSysSto=.1012E+04, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00192-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-01A-MJ       .00     .000 No_date    0:00     .00  n/a     .000
                   +      1.0 02:KB-01A-MN     40.82    3.600 No_date   28:00   33.14  n/a     .000
                 SUM=     1.0 01:KB-01A-S      40.82    3.600 No_date   28:00   33.14  n/a     .000
R0050:C00193-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-01B        31.10    3.541 No_date   28:07   36.47 .447     .000
      [XIMP=.19:TIMP=.38]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .42:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI= .42:LGI= 455.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00194-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-01B        31.10    3.541 No_date   28:07   36.47  n/a     .000
     Major System   /     1.0 02:KB-01B-MJ       .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-01B-MN     31.10    1.585 No_date   27:53   36.51  n/a     .000
      {MjSysSto=.2627E+04, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00195-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-01B-MJ       .00     .000 No_date    0:00     .00  n/a     .000
                   +      1.0 02:KB-01B-MN     31.10    1.585 No_date   27:53   36.51  n/a     .000
                 SUM=     1.0 01:KB-01B-S      31.10    1.585 No_date   27:53   36.51  n/a     .000
R0050:C00196-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-01C        13.78    2.163 No_date   28:04   37.72 .463     .000
      [XIMP=.20:TIMP=.41]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI= .50:LGI= 303.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00197-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-01C        13.78    2.163 No_date   28:04   37.72  n/a     .000
     Major System   /     1.0 02:KB-01C-MJ       .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-01C-MN     13.78    1.350 No_date   27:55   37.86  n/a     .000
      {MjSysSto=.5764E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00198-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-01C-MJ       .00     .000 No_date    0:00     .00  n/a     .000
                   +      1.0 02:KB-01C-MN     13.78    1.350 No_date   27:55   37.86  n/a     .000
                 SUM=     1.0 01:KB-01C-S      13.78    1.350 No_date   27:55   37.86  n/a     .000
R0050:C00199-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-03         84.78   11.183 No_date   28:07   37.17 .456     .000
      [XIMP=.20:TIMP=.39]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI= .63:LGI= 752.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00200-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-03         84.78   11.183 No_date   28:07   37.17  n/a     .000
     Major System   /     1.0 02:KB-03-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-03-MN      84.78    5.270 No_date   27:54   37.24  n/a     .000
      {MjSysSto=.6453E+04, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00201-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-03-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                   +      1.0 02:KB-03-MN      84.78    5.270 No_date   27:54   37.24  n/a     .000
                 SUM=     1.0 01:KB-03-S       84.78    5.270 No_date   27:54   37.24  n/a     .000
R0050:C00202-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-04          6.95    1.592 No_date   28:00   71.86 .882     .000
      [XIMP=.85:TIMP=.85]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .94:SLPI= .50:LGI= 215.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00203-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-04          6.95    1.592 No_date   28:00   71.86  n/a     .000
     Major System   /     1.0 02:KB-04-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-04-MN       6.95     .503 No_date   27:44   72.11  n/a     .000
      {MjSysSto=.9423E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00204-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-04-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                   +      1.0 02:KB-04-MN       6.95     .503 No_date   27:44   72.11  n/a     .000
                 SUM=     1.0 01:KB-04-S        6.95     .503 No_date   27:44   72.11  n/a     .000
R0050:C00205-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-05          5.19    1.270 No_date   28:00   75.92 .931     .000
      [XIMP=.93:TIMP=.93]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 186.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00206-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-06         12.93    3.268 No_date   28:00   73.20 .898     .000
      [XIMP=.87:TIMP=.87]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .94:SLPI=4.75:LGI= 294.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00207-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-06         12.93    3.268 No_date   28:00   73.20  n/a     .000
     Major System   /     1.0 02:KB-06-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-06-MN      12.93    2.262 No_date   27:52   73.67  n/a     .000
      {MjSysSto=.4323E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00208-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-06-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                   +      1.0 02:KB-06-MN      12.93    2.262 No_date   27:52   73.67  n/a     .000
                 SUM=     1.0 01:KB-06-S       12.93    2.262 No_date   27:52   73.67  n/a     .000
R0050:C00209-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-11          4.03     .921 No_date   28:00   61.82 .758     .000
      [XIMP=.68:TIMP=.68]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI=2.00:LGI= 164.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00210-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-11          4.03     .921 No_date   28:00   61.82  n/a     .000
     Major System   /     1.0 02:KB-11-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-11-MN       4.03     .577 No_date   27:52   62.10  n/a     .000
      {MjSysSto=.1581E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00211-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-11-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                   +      1.0 02:KB-11-MN       4.03     .577 No_date   27:52   62.10  n/a     .000
                 SUM=     1.0 01:KB-11-S        4.03     .577 No_date   27:52   62.10  n/a     .000
R0050:C00212-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S1             4.99    1.304 No_date   28:00   75.92 .931     .000
      [XIMP=.93:TIMP=.93]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=2.00:LGI= 182.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00213-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-15          2.15     .497 No_date   28:00   69.00 .847     .000
      [XIMP=.79:TIMP=.79]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .16:SLPI= .30:LGI= 120.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00214-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-01A-S      40.82    3.600 No_date   28:00   33.14  n/a     .000
                   +      1.0 02:KB-01B-S      31.10    1.585 No_date   27:53   36.51  n/a     .000
                   +      1.0 02:KB-01C-S      13.78    1.350 No_date   27:55   37.86  n/a     .000
                   +      1.0 02:KB-03-S       84.78    5.270 No_date   27:54   37.24  n/a     .000
                   +      1.0 02:KB-04-S        6.95     .503 No_date   27:44   72.11  n/a     .000
                   +      1.0 02:KB-05         5.19    1.270 No_date   28:00   75.92  n/a     .000
                   +      1.0 02:KB-06-S       12.93    2.262 No_date   27:52   73.67  n/a     .000
                   +      1.0 02:KB-11-S        4.03     .577 No_date   27:52   62.10  n/a     .000
                   +      1.0 02:KB-15          2.15     .497 No_date   28:00   69.00  n/a     .000
                   +      1.0 02:S1             4.99    1.304 No_date   28:00   75.92  n/a     .000
                 SUM=     1.0 01:KB-P1        206.72   18.218 No_date   28:00   42.53  n/a     .000
R0050:C00215-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:KB-P1        206.72   18.218 No_date   28:00   42.53  n/a     .000
                out <=    1.0 01:KB-P1R       198.38   12.438 No_date   28:02   42.53  n/a     .000
           overflow <=    1.0 03:KB-P1ovf       8.34    5.573 No_date   28:02   42.53  n/a     .000
     {MxStoUsed=.7313E+00  m3, TotOvfVol=.3545E+00  m3, N-Ovf=    2, TotDurOvf=    1.hrs}
R0050:C00216-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-P1R       198.38   12.438 No_date   28:02   42.53  n/a     .000
                   +      1.0 02:KB-P1ovf       8.34    5.573 No_date   28:02   42.53  n/a     .000
                 SUM=     1.0 01:KB-Pond1     206.72   18.011 No_date   28:02   42.53  n/a     .000
R0050:C00217-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:KB-Pond1     206.72   18.011 No_date   28:02   42.53  n/a     .000
      fname :KB-Pond1.0050
      remark:Total Flows at KB first pond
R0050:C00218-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-07         10.86    2.656 No_date   28:00   72.58 .890     .000
      [XIMP=.86:TIMP=.86]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI=2.00:LGI= 269.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00219-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-07         10.86    2.656 No_date   28:00   72.58  n/a     .000
     Major System   /     1.0 02:KB-07-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-07-MN      10.86    2.094 No_date   28:08   72.95  n/a     .000
      {MjSysSto=.1950E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00220-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-07-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                   +      1.0 02:KB-07-MN      10.86    2.094 No_date   28:08   72.95  n/a     .000
                 SUM=     1.0 01:KB-07-S       10.86    2.094 No_date   28:08   72.95  n/a     .000
R0050:C00221-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-08          6.61    1.444 No_date   28:00   59.78 .733     .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI=2.00:LGI= 210.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00222-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-08          6.61    1.444 No_date   28:00   59.78  n/a     .000
     Major System   /     1.0 02:KB-08-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-08-MN       6.61    1.058 No_date   27:53   60.05  n/a     .000
      {MjSysSto=.1439E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00223-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-08-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                   +      1.0 02:KB-08-MN       6.61    1.058 No_date   27:53   60.05  n/a     .000
                 SUM=     1.0 01:KB-08-S        6.61    1.058 No_date   27:53   60.05  n/a     .000
R0050:C00224-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-09          2.60     .665 No_date   28:00   71.90 .882     .000
      [XIMP=.86:TIMP=.86]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=2.00:LGI= 132.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00225-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-10_1        2.37     .607 No_date   28:00   71.90 .882     .000
      [XIMP=.86:TIMP=.86]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=2.00:LGI= 126.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00226-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-10_2        1.14     .295 No_date   28:00   71.90 .882     .000
      [XIMP=.86:TIMP=.86]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=2.00:LGI=  87.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00227-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-12          4.86    1.174 No_date   28:00   68.26 .837     .000
      [XIMP=.79:TIMP=.79]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.10:SLPI=2.00:LGI= 180.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00228-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-12          4.86    1.174 No_date   28:00   68.26  n/a     .000
     Major System   /     1.0 02:KB-12-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-12-MN       4.86     .867 No_date   28:09   68.93  n/a     .000
      {MjSysSto=.1203E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00229-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-12-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                   +      1.0 02:KB-12-MN       4.86     .867 No_date   28:09   68.93  n/a     .000
                 SUM=     1.0 01:KB-12-S        4.86     .867 No_date   28:09   68.93  n/a     .000
R0050:C00230-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-13         10.19    2.184 No_date   28:00   59.78 .733     .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI=2.00:LGI= 261.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00231-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-13         10.19    2.184 No_date   28:00   59.78  n/a     .000
     Major System   /     1.0 02:KB-13-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-13-MN      10.19    1.722 No_date   27:55   60.01  n/a     .000
      {MjSysSto=.1587E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00232-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-13-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                   +      1.0 02:KB-13-MN      10.19    1.722 No_date   27:55   60.01  n/a     .000
                 SUM=     1.0 01:KB-13-S       10.19    1.722 No_date   27:55   60.01  n/a     .000
R0050:C00233-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-14          5.47    1.201 No_date   28:00   59.78 .733     .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI=2.00:LGI= 191.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00234-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-14          5.47    1.201 No_date   28:00   59.78  n/a     .000
     Major System   /     1.0 02:KB-14-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-14-MN       5.47     .873 No_date   27:53   60.02  n/a     .000
      {MjSysSto=.1239E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00235-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-14-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                   +      1.0 02:KB-14-MN       5.47     .873 No_date   27:53   60.02  n/a     .000
                 SUM=     1.0 01:KB-14-S        5.47     .873 No_date   27:53   60.02  n/a     .000
```

```
R0050:C00236------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-16_2        3.42     .724 No_date   28:01   64.30 .789      .000
      [XIMP=.71:TIMP=.71]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .16:SLPI= .30:LGI= 151.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00237------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-Pond1     206.72   18.011 No_date   28:02   42.53  n/a      .000
                     +    1.0 02:KB-07-S       10.86    2.094 No_date   28:08   72.95  n/a      .000
                     +    1.0 02:KB-08-S        6.61    1.058 No_date   27:53   60.05  n/a      .000
                     +    1.0 02:KB-09          2.60     .665 No_date   28:00   71.90  n/a      .000
                     +    1.0 02:KB-10_1        2.37     .607 No_date   28:00   71.90  n/a      .000
                     +    1.0 02:KB-10_2        1.14     .295 No_date   28:00   71.90  n/a      .000
                     +    1.0 02:KB-12-S        4.86     .867 No_date   28:09   68.93  n/a      .000
                     +    1.0 02:KB-13-S       10.19    1.722 No_date   27:55   60.01  n/a      .000
                     +    1.0 02:KB-14-S        5.47     .873 No_date   27:53   60.02  n/a      .000
                     +    1.0 02:KB-16_2        3.42     .724 No_date   28:01   64.30  n/a      .000
                  SUM=    1.0 01:KB-P2        254.24   26.339 No_date   28:02   46.87  n/a      .000
R0050:C00238------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:KB-P2        254.24   26.339 No_date   28:02   46.87  n/a      .000
                out <=    1.0 01:KB-P2R       253.10   17.634 No_date   28:09   46.87  n/a      .000
           overflow <=    1.0 03:KB-P2ovf       1.14    5.257 No_date   28:09   46.87  n/a      .000
     {MxStoUsed=.1109E+01  m3, TotOvfVol=.5351E-01  m3, N-Ovf=    1, TotDurOvf=    0.hrs}
R0050:C00239------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-P2R       253.10   17.634 No_date   28:09   46.87  n/a      .000
                     +    1.0 02:KB-P2ovf       1.14    5.257 No_date   28:09   46.87  n/a      .000
                  SUM=    1.0 01:KB-Pond2     254.24   22.891 No_date   28:09   46.87  n/a      .000
R0050:C00240------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:KB-Pond2     254.24   22.891 No_date   28:09   46.87  n/a      .000
      fname :KB-Pond2.0050
      remark:Total Flows at KB second pond
R0050:C00241------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-16_1        2.80     .624 No_date   28:00   66.65 .818      .000
      [XIMP=.75:TIMP=.75]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .16:SLPI= .30:LGI= 137.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00242------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-Pond2     254.24   22.891 No_date   28:09   46.87  n/a      .000
                     +    1.0 02:KB-16_1        2.80     .624 No_date   28:00   66.65  n/a      .000
                  SUM=    1.0 01:KB-P3        257.04   23.147 No_date   28:09   47.08  n/a      .000
R0050:C00243------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:KB-P3        257.04   23.147 No_date   28:09   47.08  n/a      .000
                out <=    1.0 01:KB-P3R         9.40     .051 No_date   17:13   47.07  n/a      .000
           overflow <=    1.0 03:KB-P3ovf     247.64   22.286 No_date   28:10   47.08  n/a      .000
     {MxStoUsed=.1988E-02  m3, TotOvfVol=.1166E+02  m3, N-Ovf=    1, TotDurOvf=   23.hrs}
R0050:C00244------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-P3R         9.40     .051 No_date   17:13   47.07  n/a      .000
                     +    1.0 02:KB-P3ovf     247.64   22.286 No_date   28:10   47.08  n/a      .000
                  SUM=    1.0 01:KB-Pond3     257.04   22.337 No_date   28:10   47.08  n/a      .000
R0050:C00245------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:KB-Pond3     257.04   22.337 No_date   28:10   47.08  n/a      .000
      fname :KB-Pond3.0050
      remark:Total Flows at KB third pond
#******************************************************************************
#    EXISTING / PROPOSED Subcatchments (Kennedy-Burnett SWM Facility (118080), SWM Modeling Approach, NOVATECH Report Ju
#    - TO FRASER-CLARKE DRAIN
#******************************************************************************
R0050:C00246------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:FC-01          8.03    1.483 No_date   28:01   49.52 .608      .000
      [XIMP=.47:TIMP=.47]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 231.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00247------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:FC-01          8.03    1.483 No_date   28:01   49.52  n/a      .000
     Major System   /     1.0 02:FC-01-MJ        .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:FC-01-MN       8.03     .756 No_date   28:32   49.91  n/a      .000
      {MjSysSto=.4662E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00248------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:FC-01-MJ        .00     .000 No_date    0:00     .00  n/a      .000
                     +    1.0 02:FC-01-MN       8.03     .756 No_date   27:51   49.91  n/a      .000
                  SUM=    1.0 01:FC-01-S        8.03     .756 No_date   27:51   49.91  n/a      .000
R0050:C00249------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:FC-02         16.05    3.831 No_date   28:00   75.92 .931      .000
      [XIMP=.93:TIMP=.93]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 327.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00250------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:FC-02         16.05    3.831 No_date   28:00   75.92  n/a      .000
     Major System   /     1.0 02:FC-02-MJ        .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:FC-02-MN      16.05    1.159 No_date   27:43   75.94  n/a      .000
      {MjSysSto=.2348E+04, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00251------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:FC-02-MJ        .00     .000 No_date    0:00     .00  n/a      .000
                     +    1.0 02:FC-02-MN      16.05    1.159 No_date   27:43   75.94  n/a      .000
                  SUM=    1.0 01:FC-02-S       16.05    1.159 No_date   27:43   75.94  n/a      .000
R0050:C00252------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:FC-03          7.37    1.540 No_date   28:00   59.28 .727      .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 222.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00253------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:FC-03          7.37    1.540 No_date   28:00   59.28  n/a      .000
     Major System   /     1.0 02:FC-03-MJ        .02     .092 No_date   28:14   59.28  n/a      .000
     Minor System   \     1.0 03:FC-03-MN       7.35     .358 No_date   27:42   59.51  n/a      .000
      {MjSysSto=.1131E+04, TotOvfVol=.1375E+02, N-Ovf=    1, TotDurOvf=    0.hrs}
R0050:C00254------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:FC-03-MJ        .02     .092 No_date   28:14   59.28  n/a      .000
                     +    1.0 02:FC-03-MN       7.35     .358 No_date   27:42   59.51  n/a      .000
                  SUM=    1.0 01:FC-03-S        7.37     .450 No_date   28:14   59.51  n/a      .000
R0050:C00255------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:FC-04         12.87    2.587 No_date   28:01   59.28 .727      .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 293.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00256------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:FC-04         12.87    2.587 No_date   28:01   59.28  n/a      .000
     Major System   /     1.0 02:FC-04-MJ        .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:FC-04-MN      12.87     .741 No_date   27:44   59.54  n/a      .000
      {MjSysSto=.1729E+04, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00257------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:FC-04-MJ        .00     .000 No_date    0:00     .00  n/a      .000
                     +    1.0 02:FC-04-MN      12.87     .741 No_date   27:44   59.54  n/a      .000
                  SUM=    1.0 01:FC-04-S       12.87     .741 No_date   27:44   59.54  n/a      .000
#******************************************************************************
#    PROPOSED Subcatchments (Kennedy-Burnett SWM Facility (118080), SWM Modeling Approach, NOVATECH Report June, 2020)
#    - TO JOCK RIVER
#******************************************************************************
R0050:C00258------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:JR-01          8.24    1.714 No_date   28:00   59.28 .727      .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 234.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00259------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:JR-01          8.24    1.714 No_date   28:00   59.28  n/a      .000
     Major System   /     1.0 02:JR-01-MJ        .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:JR-01-MN       8.24     .563 No_date   28:59   59.48  n/a      .000
      {MjSysSto=.9643E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00260------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:JR-01-MJ        .00     .000 No_date    0:00     .00  n/a      .000
                     +    1.0 02:JR-01-MN       8.24     .563 No_date   27:44   59.48  n/a      .000
                  SUM=    1.0 01:JR-01-S        8.24     .563 No_date   27:44   59.48  n/a      .000
R0050:C00261------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:JR-02          1.59     .357 No_date   28:00   59.28 .727      .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 103.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00262------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:JR-02          1.59     .357 No_date   28:00   59.28  n/a      .000
     Major System   /     1.0 02:JR-02-MJ        .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:JR-02-MN       1.59     .153 No_date   27:45   59.66  n/a      .000
      {MjSysSto=.1319E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00263------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:JR-02-MJ        .00     .000 No_date    0:00     .00  n/a      .000
                     +    1.0 02:JR-02-MN       1.59     .153 No_date   27:45   59.66  n/a      .000
                  SUM=    1.0 01:JR-02-S        1.59     .153 No_date   27:45   59.66  n/a      .000
#******************************************************************************
#    Catchment FRASER
#    - To Fraser-Clarke drain (north of the Jock)
#    - Developed land with assumed 43% imp.
#    - 2020-12-17 Change Fraser area to be 35.1 as measured from QGIS
#    - 2020-12-17 All Fraser is undeveloped (Nashyd)
#******************************************************************************
R0050:C00264------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:FRASER-DRN    13.65     .711 No_date   28:22   39.91 .490      .000
      [CN= 77.0: N= 3.00: Tp=  .43]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0050:C00265------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:FRASER-D      21.61     .816 No_date   28:40   39.91 .490      .000
      [CN= 77.0: N= 3.00: Tp=  .67]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0050:C00266------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-Pond3     257.04   22.337 No_date   28:10   47.08  n/a      .000
                     +    1.0 02:S-1-B         55.36    2.770 No_date   28:23   39.91  n/a      .000
                     +    1.0 02:FRASER-DRN    13.65     .711 No_date   28:22   39.91  n/a      .000
                     +    1.0 02:FRASER-D      21.61     .816 No_date   28:40   39.91  n/a      .000
                     +    1.0 02:N_KB       54279.41  127.622 No_date   36:14   33.90  n/a      .000
                     +    1.0 02:FC-01-S        8.03     .756 No_date   27:51   49.91  n/a      .000
                     +    1.0 02:FC-02-S       16.05    1.159 No_date   27:43   75.94  n/a      .000
                     +    1.0 02:FC-03-S        7.37     .450 No_date   28:14   59.51  n/a      .000
                  SUM=    1.0 01:4241       54658.52  128.395 No_date   35:50   33.99  n/a      .000
R0050:C00267------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:4241       54658.52  128.395 No_date   35:50   33.99  n/a      .000
      fname :4241.0050
      remark:Total Flows at Ken-Burnett Outlet
# Hydrograph from Node Ken-Burnett to station 3633
# Channel X-Section obtained from RVCA Hydraulic Model - Station 4241
#
R0050:C00268------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:4241       54658.52  128.395 No_date   35:50   33.99  n/a      .000
     [RDT= 1.00] out<-    1.0 01:4241-out   54658.52  128.422 No_date   36:04   33.99  n/a      .000
      [L/S/n=  294./ .109/.035]
      {Vmax= 1.338:Dmax= 2.446}
R0050:C00269------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:4241-out   54658.52  128.422 No_date   36:04   33.99  n/a      .000
                     +    1.0 02:FC-04-S       12.87     .741 No_date   27:44   59.54  n/a      .000
                     +    1.0 02:JR-01-S        8.24     .563 No_date   27:44   59.48  n/a      .000
                     +    1.0 02:JR-02-S        1.59     .153 No_date   27:45   59.66  n/a      .000
                  SUM=    1.0 01:SN_KB      54681.21  128.479 No_date   35:47   34.00  n/a      .000
R0050:C00270------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_KB      54681.21  128.479 No_date   35:47   34.00  n/a      .000
      fname :SN_KB.0050
      remark:HYD_COMMENT=["Total Flows before Station 3633]
# Hydrograph from Station 3633 to Node Todd
# Channel X-Section obtained from RVCA Hydraulic Model - Station 3633
# JFSA 2021-02-26 change the channel length (at station 3633) from 650m to 608m and change the slope from 0.0498% to 0.2
#
R0050:C00271------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_KB      54681.21  128.479 No_date   35:47   34.00  n/a      .000
     [RDT= 1.00] out<-    1.0 01:N_TO       54681.21  128.396 No_date   36:11   34.00  n/a      .000
      [L/S/n=  608./ .247/.035]
      {Vmax= 1.819:Dmax= 1.834}
#******************************************************************************
#    Catchment Greenbank
#    - To Greenbank Drain (south of the Jock)
#    - JFSA 2021-01-18 add Greenbank pond as per JFSA, P598(06)-15, June 2016
#    - JFSA 2021-01-19 update area from 37.479 ha to 36.6 ha based on GIS measurements
#******************************************************************************
R0050:C00272------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:Greenbank     36.60    6.286 No_date   28:02   65.04 .798      .000
      [XIMP=.64:TIMP=.68]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 494.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0050:C00273------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:Greenbank     36.60    6.286 No_date   28:02   65.04  n/a      .000
                out <=    1.0 01:GreenB_MN     36.60    4.176 No_date   28:09   65.04  n/a      .000
           overflow <=    1.0 03:GreenB_MJ       .00     .000 No_date    0:00     .00  n/a      .000
     {MxStoUsed=.9063E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00274------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N_TO       54681.21  128.396 No_date   36:11   34.00  n/a      .000
                     +    1.0 02:GreenB_MJ       .00     .000 No_date    0:00     .00  n/a      .000
                     +    1.0 02:GreenB_MN     36.60    4.176 No_date   28:09   65.04  n/a      .000
                  SUM=    1.0 01:GreenB     54717.81  128.564 No_date   36:11   34.02  n/a      .000
R0050:C00275------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:GreenB     54717.81  128.564 No_date   36:11   34.02  n/a      .000
      fname :GreenB.0050
      remark:Total Flows at Greenbank Drain
#******************************************************************************
#    Catchment TODD
#    - To Todd Drain (south of the Jock)
#    - Subdivision with 43% imp. as per Barrhaven South MSS
#    - 2020-11-30 increase imp. based on P598(04)-11
#    - 2020-11-30 update TODD Tributary Drainage Area to  = 146.015 ha based on P598(04)-11
#    - 2020-11-30 split TODD Drainage Area to MAJOR, MINOR, POND and ALL
#******************************************************************************
#    - JFSA 2021-01-19 add "TODD_MN1" as part of Clarke("W_CLAR_MJ") and remove it from Todd
R0050:C00276------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:TODD_MN2       2.10     .384 No_date   28:00   60.14 .738      .000
      [XIMP=.53:TIMP=.57]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 118.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0050:C00277------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:TODD_MN3        .12     .022 No_date   28:00   60.13 .738      .000
      [XIMP=.53:TIMP=.57]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI=  28.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0050:C00278------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:TODD_MJ       30.23    4.894 No_date   28:02   61.85 .759      .000
      [XIMP=.52:TIMP=.64]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 449.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0050:C00279------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:TODD_ALL     112.91   15.270 No_date   28:04   59.95 .735      .000
      [XIMP=.52:TIMP=.57]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 868.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0050:C00280------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:TODD_P         3.06     .600 No_date   28:00   63.61 .780      .000
      [XIMP=.63:TIMP=.63]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 143.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
# 5-Year + 12% Capture
R0050:C00281------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:TODD_MJ       30.23    4.894 No_date   28:02   61.85  n/a      .000
                out <=    1.0 01:TODD_MJn      28.89    3.314 No_date   27:54   61.87  n/a      .000
           overflow <=    1.0 03:TODD_MJj       1.34    1.567 No_date   28:02   61.85  n/a      .000
     {MxStoUsed=.1169E-02  m3, TotOvfVol=.8285E-01  m3, N-Ovf=    1, TotDurOvf=    0.hrs}
# 5-Year + 12% Capture
R0050:C00282------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:TODD_MN2       2.10     .384 No_date   28:00   60.14  n/a      .000
                out <=    1.0 01:TODD_MN2n      2.02     .268 No_date   27:53   60.14  n/a      .000
           overflow <=    1.0 03:TODD_MN2j       .08     .111 No_date   28:00   60.14  n/a      .000
     {MxStoUsed=.1643E-03  m3, TotOvfVol=.4631E-02  m3, N-Ovf=    1, TotDurOvf=    0.hrs}
R0050:C00283------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:TODD_MN3        .12     .022 No_date   28:00   60.13  n/a      .000
                out <=    1.0 01:TODD_MN3n       .11     .016 No_date   27:52   60.13  n/a      .000
           overflow <=    1.0 03:TODD_MN3j       .00     .006 No_date   28:00   60.13  n/a      .000
     {MxStoUsed=.8712E-04  m3, TotOvfVol=.2472E-03  m3, N-Ovf=    1, TotDurOvf=    0.hrs}
R0050:C00284------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A2            25.50    3.441 No_date   28:03   55.89 .686      .000
      [XIMP=.42:TIMP=.52]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 566.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0050:C00285------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A2            25.50    3.441 No_date   28:03   55.89  n/a      .000
     Major System   /     1.0 02:A2-MJ           .64    1.180 No_date   28:07   55.89  n/a      .000
     Minor System   \     1.0 03:A2-MN         24.86    1.818 No_date   28:39   56.08  n/a      .000
      {MjSysSto=.9240E+03, TotOvfVol=.3586E+03, N-Ovf=    1, TotDurOvf=    0.hrs}
R0050:C00286------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:TODD_MN2n      2.02     .268 No_date   27:53   60.14  n/a      .000
                     +    1.0 02:TODD_MN3n       .11     .016 No_date   27:52   60.13  n/a      .000
                     +    1.0 02:TODD_MJj       1.34    1.567 No_date   28:02   61.85  n/a      .000
                     +    1.0 02:TODD_P         3.06     .600 No_date   28:00   63.61  n/a      .000
                     +    1.0 02:TODD_ALL     112.91   15.270 No_date   28:04   59.95  n/a      .000
                     +    1.0 02:W_CLAR_MJn     1.70     .213 No_date   27:53   59.44  n/a      .000
                  SUM=    1.0 01:TODD         121.14   17.643 No_date   28:03   60.06  n/a      .000
R0050:C00287------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:TODD         121.14   17.643 No_date   28:03   60.06  n/a      .000
      fname :TODD.0050
      remark:Total Flows at Todd Drain
#******************************************************************************
#    Todd Pond 3
#    - Rating curve obtained from Barrhaven South MSS modeling
#    - stantec 2007, Tributary Drainage Area to MSS Pond 3 = 193 ha
#******************************************************************************
R0050:C00288------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:TODD         121.14   17.643 No_date   28:03   60.06  n/a      .000
                out <=    1.0 01:MS_P3        121.14   12.815 No_date   28:10   60.05  n/a      .000
           overflow <=    1.0 03:P3-OVF          .00     .000 No_date    0:00     .00  n/a      .000
     {MxStoUsed=.2728E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00289------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:GreenB     54717.81  128.564 No_date   36:11   34.02  n/a      .000
                     +    1.0 02:MS_P3        121.14   12.815 No_date   28:10   60.05  n/a      .000
                     +    1.0 02:P3-OVF          .00     .000 No_date    0:00     .00  n/a      .000
                     +    1.0 02:TODD_MN2j       .08     .111 No_date   28:00   60.14  n/a      .000
                     +    1.0 02:A2-MJ           .64    1.180 No_date   28:07   55.89  n/a      .000
                  SUM=    1.0 01:SN_TO      54839.66  128.992 No_date   36:10   34.08  n/a      .000
R0050:C00290------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_TO      54839.66  128.992 No_date   36:10   34.08  n/a      .000
      fname :SN_TO.0050
      remark:Total Flows at Todd Drain
#
# Hydrograph from Todd Drain routed to Corrigan Drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 2462
# 2021-02-19 Change the slope from 0.033 % (as per Stantec Report 2007) to 0.05 % so the model will be more stable and g
R0050:C00291------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_TO      54839.66  128.992 No_date   36:10   34.08  n/a      .000
 *   [RDT= 1.00] out<-    1.0 01:N_TO       54839.66  128.918 No_date   36:18   34.08  n/a      .000
      [L/S/n=  280./ .050/.045]
      {Vmax=  .886:Dmax= 3.496}
R0050:C00292------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:N_TO       54839.66  128.918 No_date   36:18   34.08  n/a      .000
      fname :N_TO.0050
      remark:Total inflows at Station 2462
#******************************************************************************
#    Catchment CORRIG
#    - To Corrigan Drain (south of the Jock)
```

```
#    - Primarily Developed (medium density)
#    - JFSA JAN 2021, add Corrigan subcatchments as per IBI, July 2008
#**************************************************************************
R0050:C00293------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:corr1         15.87    2.851 No_date   28:01   63.61 .780      .000
      [XIMP=.63:TIMP=.63]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 325.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0050:C00294------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:corr1         15.87    2.851 No_date   28:01   63.61  n/a      .000
     Major System   /     1.0 02:corr1-MJ        .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:corr1-MN      15.87    1.818 No_date   28:19   63.67  n/a      .000
      {MjSysSto=.5297E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00295------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:corr2         12.47     .330 No_date   29:10   39.91 .490      .000
      [CN= 77.0: N= 3.00: Tp= 1.10]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0050:C00296------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A1-Corrig     15.75    2.330 No_date   28:01   55.89 .686      .000
      [XIMP=.42:TIMP=.52]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 324.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0050:C00297------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A1-Corrig     15.75    2.330 No_date   28:01   55.89  n/a      .000
     Major System   /     1.0 02:A1-MJ           .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:A1-MN         15.75    1.818 No_date   27:56   56.07  n/a      .000
      {MjSysSto=.1953E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00298------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:B1             2.77     .119 No_date   28:09   24.96 .306      .000
      [CN= 56.0: N= 3.00: Tp=  .23]
      [IaREC= 4.00: SMIN= 79.69: SMAX=531.24: SK= .010]
      [InterEventTime=  12.00]
R0050:C00299------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A4             1.27     .239 No_date   28:00   63.95 .785      .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 253.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0050:C00300------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A4             1.27     .239 No_date   28:00   63.95  n/a      .000
     Major System   /     1.0 02:A4-MJ           .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:A4-MN          1.27     .239 No_date   28:00   63.95  n/a      .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00301------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:A1-MJ           .00     .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:A1-MN         15.75    1.818 No_date   27:56   56.07  n/a      .000
                    +     1.0 02:corr1-MJ        .00     .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:corr1-MN      15.87    1.818 No_date   28:19   63.67  n/a      .000
                    +     1.0 02:corr2         12.47     .330 No_date   29:10   39.91  n/a      .000
                    +     1.0 02:B1             2.77     .119 No_date   28:09   24.96  n/a      .000
                    +     1.0 02:A4-MN          1.27     .239 No_date   28:00   63.95  n/a      .000
                 SUM=     1.0 01:MH101         48.13    4.028 No_date   28:02   52.81  n/a      .000
R0050:C00302------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH101         48.13    4.028 No_date   28:02   52.81  n/a      .000
      fname :MH101.0050
      remark:Total Flows at MH101
R0050:C00303------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH101         48.13    4.028 No_date   28:02   52.81  n/a      .000
 *   [RDT= 1.00] out<-    1.0 01:101-102       48.13    4.005 No_date   28:03   52.81  n/a      .000
      [L/S/n=  368./ .540/.013]
      {Vmax= 3.143:Dmax= 1.119}
      [Din= 1.05:Dused= 1.36}
R0050:C00304------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:A2-MN         24.86    1.818 No_date   28:39   56.08  n/a      .000
                    +     1.0 02:101-102       48.13    4.005 No_date   28:03   52.81  n/a      .000
                 SUM=     1.0 01:MH102         72.99    5.823 No_date   28:03   53.92  n/a      .000
R0050:C00305------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH102         72.99    5.823 No_date   28:03   53.92  n/a      .000
      fname :MH102.0050
      remark:Total Flows at MH102
R0050:C00306------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A5             1.60     .312 No_date   28:01   66.69 .818      .000
      [XIMP=.71:TIMP=.71]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 300.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0050:C00307------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:A4-MJ           .00     .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:A5             1.60     .312 No_date   28:01   66.69  n/a      .000
                 SUM=     1.0 01:A5T            1.60     .312 No_date   28:01   66.69  n/a      .000
R0050:C00308------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A5T            1.60     .312 No_date   28:01   66.69  n/a      .000
     Major System   /     1.0 02:A5-MJ           .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:A5-MN          1.60     .312 No_date   28:01   66.69  n/a      .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00309------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH102         72.99    5.823 No_date   28:03   53.92  n/a      .000
 *   [RDT= 1.00] out<-    1.0 01:102-103       72.99    5.773 No_date   28:14   53.92  n/a      .000
      [L/S/n=  504./ .280/.013]
      {Vmax= 2.694:Dmax= 1.453}
      [Din= 1.50:Dused= 1.77}
R0050:C00310------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:102-103       72.99    5.773 No_date   28:14   53.92  n/a      .000
                    +     1.0 02:A5-MN          1.60     .312 No_date   28:01   66.69  n/a      .000
                 SUM=     1.0 01:MH103         74.59    5.961 No_date   28:03   54.19  n/a      .000
R0050:C00311------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH103         74.59    5.961 No_date   28:03   54.19  n/a      .000
      fname :MH103.0050
      remark:Total Flows at MH103
R0050:C00312------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH103         74.59    5.961 No_date   28:03   54.19  n/a      .000
     [RDT= 1.00] out<-    1.0 01:103-104       74.59    5.915 No_date   28:07   54.19  n/a      .000
      [L/S/n=  438./ .460/.013]
      {Vmax= 3.295:Dmax= 1.301}
      [Din= 1.65:Dused= 1.65}
R0050:C00313------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A6             1.56     .306 No_date   28:00   66.69 .818      .000
      [XIMP=.71:TIMP=.71]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 280.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0050:C00314------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:A5-MJ           .00     .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:A6             1.56     .306 No_date   28:00   66.69  n/a      .000
                 SUM=     1.0 01:A6T            1.56     .306 No_date   28:00   66.69  n/a      .000
R0050:C00315------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A6T            1.56     .306 No_date   28:00   66.69  n/a      .000
     Major System   /     1.0 02:A6-MJ           .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:A6-MN          1.56     .306 No_date   28:00   66.69  n/a      .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00316------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:A6-MN          1.56     .306 No_date   28:00   66.69  n/a      .000
                    +     1.0 02:103-104       74.59    5.915 No_date   28:07   54.19  n/a      .000
                    +     1.0 02:TODD_MJn      28.89    3.314 No_date   27:54   61.87  n/a      .000
                 SUM=     1.0 01:MH104        105.04    9.444 No_date   28:04   56.49  n/a      .000
R0050:C00317------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH104        105.04    9.444 No_date   28:04   56.49  n/a      .000
      fname :MH104.0050
      remark:Total Flows at MH104
R0050:C00318------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:B2            12.31    1.758 No_date   28:02   56.26 .690      .000
      [XIMP=.41:TIMP=.54]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 417.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0050:C00319------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:B2            12.31    1.758 No_date   28:02   56.26  n/a      .000
     Major System   /     1.0 02:B2-MJ           .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:B2-MN         12.31    1.029 No_date   27:53   56.54  n/a      .000
      {MjSysSto=.4799E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00320------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:B2-MN         12.31    1.029 No_date   27:53   56.54  n/a      .000
 *   [RDT= 1.00] out<-    1.0 01:315-333       12.31    1.029 No_date   28:33   56.54  n/a      .000
      [L/S/n=  254./ .100/.013]
      {Vmax= 1.220:Dmax=  .838}
      [Din= 1.20:Dused= 1.20}
R0050:C00321------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:B3             5.59     .825 No_date   28:01   56.26 .690      .000
      [XIMP=.41:TIMP=.54]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 345.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0050:C00322------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:B3             5.59     .825 No_date   28:01   56.26  n/a      .000
     Major System   /     1.0 02:B3-MJ           .02     .083 No_date   28:09   56.26  n/a      .000
     Minor System   \     1.0 03:B3-MN          5.57     .459 No_date   27:52   56.28  n/a      .000
      {MjSysSto=.2270E+03, TotOvfVol=.1279E+02, N-Ovf=    1, TotDurOvf=    0.hrs}
R0050:C00323------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:B3-MN          5.57     .459 No_date   27:52   56.28  n/a      .000
                    +     1.0 02:315-333       12.31    1.029 No_date   28:33   56.54  n/a      .000
                 SUM=     1.0 01:MH333         17.88    1.488 No_date   28:32   56.46  n/a      .000
R0050:C00324------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH333         17.88    1.488 No_date   28:32   56.46  n/a      .000
      fname :MH333.0050
      remark:Total Flows at MH333
R0050:C00325------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH333         17.88    1.488 No_date   28:32   56.46  n/a      .000
 *   [RDT= 1.00] out<-    1.0 01:333-335       17.88    1.479 No_date   28:19   56.46  n/a      .000
      [L/S/n=  251./ .100/.013]
      {Vmax= 1.302:Dmax= 1.057}
      [Din= 1.20:Dused= 1.29}
R0050:C00326------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:333-335       17.88    1.479 No_date   28:19   56.46  n/a      .000
 *   [RDT= 1.00] out<-    1.0 01:335-338       17.88    1.478 No_date   28:16   56.46  n/a      .000
      [L/S/n=  185./ .100/.013]
      {Vmax= 1.300:Dmax= 1.054}
      [Din= 1.20:Dused= 1.28}
R0050:C00327------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:335-338       17.88    1.478 No_date   28:16   56.46  n/a      .000
     [RDT= 1.00] out<-    1.0 01:338-340       17.88    1.454 No_date   28:18   56.46  n/a      .000
      [L/S/n=  233./ .100/.013]
      {Vmax= 1.330:Dmax=  .979}
      [Din= 1.35:Dused= 1.35}
R0050:C00328------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:B4             7.60    1.094 No_date   28:02   56.26 .690      .000
      [XIMP=.41:TIMP=.54]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 388.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0050:C00329------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:B4             7.60    1.094 No_date   28:02   56.26  n/a      .000
     Major System   /     1.0 02:B4-MJ           .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:B4-MN          7.60     .655 No_date   27:53   56.27  n/a      .000
      {MjSysSto=.2780E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00330------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:338-340       17.88    1.454 No_date   28:18   56.46  n/a      .000
                    +     1.0 02:B4-MN          7.60     .655 No_date   27:53   56.27  n/a      .000
                 SUM=     1.0 01:MH340         25.48    2.109 No_date   28:18   56.41  n/a      .000
R0050:C00331------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH340         25.48    2.109 No_date   28:18   56.41  n/a      .000
      fname :MH340.0050
      remark:Total Flows at MH340
R0050:C00332------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH340         25.48    2.109 No_date   28:18   56.41  n/a      .000
     [RDT= 1.00] out<-    1.0 01:340-104       25.48    2.090 No_date   28:18   56.41  n/a      .000
      [L/S/n=  240./ .150/.013]
      {Vmax= 1.723:Dmax=  .918}
      [Din= 1.65:Dused= 1.65}
R0050:C00333------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:340-104       25.48    2.090 No_date   28:18   56.41  n/a      .000
                    +     1.0 02:MH104        105.04    9.444 No_date   28:04   56.49  n/a      .000
                 SUM=     1.0 01:MH104T       130.52   11.391 No_date   28:07   56.48  n/a      .000
R0050:C00334------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH104T       130.52   11.391 No_date   28:07   56.48  n/a      .000
 *   [RDT= 1.00] out<-    1.0 01:104-105      130.52   11.118 No_date   28:10   56.48  n/a      .000
      [L/S/n=  380./ .100/.013]
      {Vmax= 2.107:Dmax= 2.003}
      {HGTH= 2.36:WDTH= 2.70}
R0050:C00335------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:B5             2.20     .390 No_date   28:00   60.29 .740      .000
      [XIMP=.57:TIMP=.57]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 187.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0050:C00336------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:B5             2.20     .390 No_date   28:00   60.29  n/a      .000
     Major System   /     1.0 02:B5-MJ           .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:B5-MN          2.20     .260 No_date   27:53   60.60  n/a      .000
      {MjSysSto=.5913E+02, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00337------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A8              .96     .198 No_date   28:00   66.69 .818      .000
      [XIMP=.71:TIMP=.71]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 186.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0050:C00338------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:A6-MJ           .00     .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:A8              .96     .198 No_date   28:00   66.69  n/a      .000
                 SUM=     1.0 01:A8T             .96     .198 No_date   28:00   66.69  n/a      .000
R0050:C00339------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A8T             .96     .198 No_date   28:00   66.69  n/a      .000
     Major System   /     1.0 02:A8-MJ           .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:A8-MN           .96     .198 No_date   28:00   66.69  n/a      .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00340------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:104-105      130.52   11.118 No_date   28:10   56.48  n/a      .000
                    +     1.0 02:B5-MN          2.20     .260 No_date   27:53   60.60  n/a      .000
                    +     1.0 02:A8-MN           .96     .198 No_date   28:00   66.69  n/a      .000
                    +     1.0 02:TODD_MN3j       .00     .006 No_date   28:00   60.13  n/a      .000
                 SUM=     1.0 01:MH105        133.68   11.441 No_date   28:10   56.62  n/a      .000
R0050:C00341------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH105        133.68   11.441 No_date   28:10   56.62  n/a      .000
      fname :MH105.0050
      remark:Total Flows at MH105
R0050:C00342------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
 *  DIVERT HYD      ->    1.0 01:A8-MJ           .00     .000 No_date    0:00     .00  n/a      .000
           diverted <=    1.0 02:A8-MJ-JR        .00     .000 No_date    0:00     .00  n/a      .000
           diverted <=    1.0 03:A8-MJ-B6        .00     .000 No_date    0:00     .00  n/a      .000
R0050:C00343------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    DIVERT HYD      ->    1.0 01:MH105        133.68   11.441 No_date   28:10   56.62  n/a      .000
           diverted <=    1.0 02:MH105-JR      35.42    8.432 No_date   28:10   56.62  n/a      .000
           diverted <=    1.0 03:MH105-B6      98.26    3.009 No_date   28:10   56.62  n/a      .000
R0050:C00344------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:B7             7.19    1.124 No_date   28:01   56.26 .690      .000
      [XIMP=.41:TIMP=.54]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 211.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0050:C00345------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:B4-MJ           .00     .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:B7             7.19    1.124 No_date   28:01   56.26  n/a      .000
                 SUM=     1.0 01:B7-B4MJ        7.19    1.124 No_date   28:01   56.26  n/a      .000
R0050:C00346------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:B7-B4MJ        7.19    1.124 No_date   28:01   56.26  n/a      .000
     Major System   /     1.0 02:B7R-MJ          .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:B7R-MN         7.19     .629 No_date   27:51   56.37  n/a      .000
      {MjSysSto=.2888E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00347------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:B7R-MN         7.19     .629 No_date   27:51   56.37  n/a      .000
 *   [RDT= 1.00] out<-    1.0 01:360-106A       7.19     .629 No_date   28:28   56.37  n/a      .000
      [L/S/n=  167./ .100/.013]
      {Vmax= 1.089:Dmax=  .665}
      [Din= 1.05:Dused= 1.05}
R0050:C00348------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:B6             3.29     .535 No_date   28:00   56.26 .690      .000
      [XIMP=.41:TIMP=.54]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 148.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0050:C00349------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:B6             3.29     .535 No_date   28:00   56.26  n/a      .000
     Major System   /     1.0 02:B6-MJ           .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:B6-MN          3.29     .064 No_date   27:33   56.32  n/a      .000
      {MjSysSto=.6238E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00350------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:EX-LAND       32.50    4.637 No_date   28:02   56.33 .691      .000
      [XIMP=.50:TIMP=.50]
      [LOSS= 2 :CN= 74.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 465.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 36.67: SMAX=244.49: SK= .010]
R0050:C00351------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:EX-LAND       32.50    4.637 No_date   28:02   56.33  n/a      .000
     Major System   /     1.0 02:EX-LAND-MJ      .76    1.533 No_date   28:06   56.33  n/a      .000
     Minor System   \     1.0 03:EX-LAND-MN    31.74    2.275 No_date   27:49   56.55  n/a      .000
      {MjSysSto=.1365E+04, TotOvfVol=.4274E+03, N-Ovf=    1, TotDurOvf=    0.hrs}
R0050:C00352------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:B7R-MJ          .00     .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:EX-LAND-MJ      .76    1.533 No_date   28:06   56.33  n/a      .000
                    +     1.0 02:B5-MJ           .00     .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:B6-MJ           .00     .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:B6-MN          3.29     .064 No_date   27:33   56.32  n/a      .000
                    +     1.0 02:A8-MJ-B6        .00     .000 No_date    0:00     .00  n/a      .000
                 SUM=     1.0 01:B6-B7ExMJ      4.05    1.597 No_date   28:06   56.32  n/a      .000
R0050:C00353------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:B6-B7ExMJ      4.05    1.597 No_date   28:06   56.32  n/a      .000
     Major System   /     1.0 02:B6R-MJ          .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:B6R-MN         4.05     .064 No_date   27:33   56.36  n/a      .000
      {MjSysSto=.4274E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00354------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH105-B6      98.26    3.009 No_date   28:10   56.62  n/a      .000
     [RDT= 1.00] out<-    1.0 01:105-106A      98.26    3.009 No_date   28:07   56.62  n/a      .000
      [L/S/n=  208./ .100/.013]
      {Vmax= 1.597:Dmax= 1.249}
      [Din= 1.80:Dused= 1.80}
R0050:C00355------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:360-106A       7.19     .629 No_date   28:28   56.37  n/a      .000
                    +     1.0 02:105-106A      98.26    3.009 No_date   28:07   56.62  n/a      .000
                    +     1.0 02:B6R-MN         4.05     .064 No_date   27:33   56.36  n/a      .000
                    +     1.0 02:B6R-MJ          .00     .000 No_date    0:00     .00  n/a      .000
                 SUM=     1.0 01:MH106A       109.50    3.701 No_date   28:10   56.59  n/a      .000
R0050:C00356------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH106A       109.50    3.701 No_date   28:10   56.59  n/a      .000
      fname :MH106A.0050
      remark:Total Flows at MH106A
R0050:C00357------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH106A       109.50    3.701 No_date   28:10   56.59  n/a      .000
 *   [RDT= 1.00] out<-    1.0 01:106A-106     109.50    3.702 No_date   27:59   56.59  n/a      .000
      [L/S/n=  190./ .100/.013]
      {Vmax= 1.635:Dmax= 1.487}
      [Din= 1.80:Dused= 1.81}
R0050:C00358------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A9             2.44     .481 No_date   28:00   66.69 .818      .000
      [XIMP=.71:TIMP=.71]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
```

```
         [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 262.:MNI=.013:SCI=   .0]
         [IaRECimp=   4.00: IaRECper=   4.00]
         [SMIN= 33.81: SMAX=225.43: SK= .010]
R0050:C00359-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     COMPUTE DUALHYD       1.0 01:A9              2.44     .481 No_date   28:00   66.69  n/a     .000
      Major System   /     1.0 02:A9-MJ            .00     .000 No_date    0:00     .00  n/a     .000
      Minor System   \     1.0 03:A9-MN           2.44     .481 No_date   28:00   66.69  n/a     .000
R0050:C00360-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:106A-106      109.50    3.702 No_date   27:59   56.59  n/a     .000
                     +     1.0 02:A9-MN           2.44     .481 No_date   28:00   66.69  n/a     .000
                  SUM=     1.0 01:MH106         111.94    4.177 No_date   28:00   56.81  n/a     .000
R0050:C00361-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     SAVE HYD              1.0 01:MH106         111.94    4.177 No_date   28:00   56.81  n/a     .000
       fname :MH106.0050
       remark:Total Flows at MH106
R0050:C00362-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE PIPE      ->    1.0 02:MH106         111.94    4.177 No_date   28:00   56.81  n/a     .000
 *    [RDT= 1.00] out<-    1.0 01:106-107       111.94    4.129 No_date   28:00   56.81  n/a     .000
       [L/S/n=  123./ .100/.013]
       {Vmax= 1.685:Dmax= 1.556}
       [Din= 1.80:Dused= 1.90}
R0050:C00363-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:A10             4.14     .602 No_date   28:01   53.20 .653     .000
       [XIMP=.35:TIMP=.47]
       [LOSS= 2 :CN= 75.0]
       [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 183.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 33.81: SMAX=225.43: SK= .010]
R0050:C00364-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     COMPUTE DUALHYD       1.0 01:A10             4.14     .602 No_date   28:01   53.20  n/a     .000
      Major System   /     1.0 02:A10-MJ           .00     .000 No_date    0:00     .00  n/a     .000
      Minor System   \     1.0 03:A10-MN          4.14     .310 No_date   27:50   53.25  n/a     .000
       {MjSysSto=.1897E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00365-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:A11            10.61    1.720 No_date   28:02   60.69 .745     .000
       [XIMP=.53:TIMP=.62]
       [LOSS= 2 :CN= 75.0]
       [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 379.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 33.81: SMAX=225.43: SK= .010]
R0050:C00366-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     COMPUTE DUALHYD       1.0 01:A11            10.61    1.720 No_date   28:02   60.69  n/a     .000
      Major System   /     1.0 02:A11-MJ           .00     .000 No_date    0:00     .00  n/a     .000
      Minor System   \     1.0 03:A11-MN         10.61     .993 No_date   27:52   60.86  n/a     .000
       {MjSysSto=.4540E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00367-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:106-107       111.94    4.129 No_date   28:00   56.81  n/a     .000
                     +     1.0 02:A10-MN          4.14     .310 No_date   27:50   53.25  n/a     .000
                     +     1.0 02:A11-MN         10.61     .993 No_date   27:52   60.86  n/a     .000
                  SUM=     1.0 01:MH107         126.69    5.432 No_date   28:00   57.03  n/a     .000
R0050:C00368-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     SAVE HYD              1.0 01:MH107         126.69    5.432 No_date   28:00   57.03  n/a     .000
       fname :MH107.0050
       remark:Total Flows at MH107
R0050:C00369-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE PIPE      ->    1.0 02:MH107         126.69    5.432 No_date   28:00   57.03  n/a     .000
 *    [RDT= 1.00] out<-    1.0 01:107-119       126.69    5.345 No_date   28:00   57.03  n/a     .000
       [L/S/n=  114./ .120/.013]
       {Vmax= 1.927:Dmax= 1.660}
       [Din= 1.80:Dused= 2.02}
R0050:C00370-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE PIPE      ->    1.0 02:107-119       126.69    5.345 No_date   28:00   57.03  n/a     .000
 *    [RDT= 1.00] out<-    1.0 01:119-108       126.69    5.334 No_date   28:01   57.03  n/a     .000
       [L/S/n=   66./ .120/.013]
       {Vmax= 1.919:Dmax= 1.650}
       [Din= 1.80:Dused= 2.01}
R0050:C00371-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:A12            12.29    1.938 No_date   28:01   56.26 .690     .000
       [XIMP=.41:TIMP=.54]
       [LOSS= 2 :CN= 75.0]
       [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 183.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 33.81: SMAX=225.43: SK= .010]
R0050:C00372-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     COMPUTE DUALHYD       1.0 01:A12            12.29    1.938 No_date   28:01   56.26  n/a     .000
      Major System   /     1.0 02:A12-MJ           .00     .000 No_date    0:00     .00  n/a     .000
      Minor System   \     1.0 03:A12-MN         12.29    1.029 No_date   27:50   56.44  n/a     .000
       {MjSysSto=.5545E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00373-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:A13             2.59     .487 No_date   28:01   66.69 .818     .000
       [XIMP=.71:TIMP=.71]
       [LOSS= 2 :CN= 75.0]
       [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 379.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 33.81: SMAX=225.43: SK= .010]
R0050:C00374-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     COMPUTE DUALHYD       1.0 01:A13             2.59     .487 No_date   28:01   66.69  n/a     .000
      Major System   /     1.0 02:A13-MJ           .00     .000 No_date    0:00     .00  n/a     .000
      Minor System   \     1.0 03:A13-MN          2.59     .487 No_date   28:01   66.69  n/a     .000
R0050:C00375-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:Pond-Block      2.94     .430 No_date   28:00   53.21 .653     .000
       [XIMP=.41:TIMP=.41]
       [LOSS= 2 :CN= 75.0]
       [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 183.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 33.81: SMAX=225.43: SK= .010]
R0050:C00376-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:119-108       126.69    5.334 No_date   28:01   57.03  n/a     .000
                     +     1.0 02:A13-MN          2.59     .487 No_date   28:01   66.69  n/a     .000
                     +     1.0 02:A12-MN         12.29    1.029 No_date   27:50   56.44  n/a     .000
                  SUM=     1.0 01:MH108         141.57    6.850 No_date   28:01   57.16  n/a     .000
R0050:C00377-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     SAVE HYD              1.0 01:MH108         141.57    6.850 No_date   28:01   57.16  n/a     .000
       fname :MH108.0050
       remark:Total Flows at MH108
R0050:C00378-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE PIPE      ->    1.0 02:MH108         141.57    6.850 No_date   28:01   57.16  n/a     .000
 *    [RDT= 1.00] out<-    1.0 01:108-116       141.57    6.810 No_date   28:02   57.16  n/a     .000
       [L/S/n=   77./ .130/.013]
       {Vmax= 2.104:Dmax= 1.784}
       [Din= 1.80:Dused= 2.17}
R0050:C00379-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE PIPE      ->    1.0 02:108-116       141.57    6.810 No_date   28:02   57.16  n/a     .000
 *    [RDT= 1.00] out<-    1.0 01:116-corrig    141.57    6.771 No_date   28:02   57.16  n/a     .000
       [L/S/n=   80./ .130/.013]
       {Vmax= 2.101:Dmax= 1.780}
       [Din= 1.80:Dused= 2.17}
R0050:C00380-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:116-corrig    141.57    6.771 No_date   28:02   57.16  n/a     .000
                     +     1.0 02:Pond-Block      2.94     .430 No_date   28:00   53.21  n/a     .000
                  SUM=     1.0 01:Corrigan      144.51    7.185 No_date   28:02   57.08  n/a     .000
R0050:C00381-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     SAVE HYD              1.0 01:Corrigan      144.51    7.185 No_date   28:02   57.08  n/a     .000
       fname :Corrigan.0050
       remark:HYD_COMMENT=["Total Flows at Corrigan Pond]
R0050:C00382-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE RESERVOIR ->    1.0 02:Corrigan      144.51    7.185 No_date   28:02   57.08  n/a     .000
                out <=     1.0 01:Co-P          144.51    6.335 No_date   28:26   57.08  n/a     .000
           overflow <=     1.0 03:Co-P-OVF         .00     .000 No_date    0:00     .00  n/a     .000
      {MxStoUsed=.1027E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00383-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:Co-P-OVF         .00     .000 No_date    0:00     .00  n/a     .000
                     +     1.0 02:Co-P          144.51    6.335 No_date   28:26   57.08  n/a     .000
                     +     1.0 02:N_TO        54839.66  128.918 No_date   36:18   34.08  n/a     .000
                     +     1.0 02:MH105-JR      35.42    8.432 No_date   28:10   56.62  n/a     .000
                     +     1.0 02:A8-MJ-JR         .00     .000 No_date    0:00     .00  n/a     .000
                     +     1.0 02:A9-MJ            .00     .000 No_date    0:00     .00  n/a     .000
                     +     1.0 02:A10-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                     +     1.0 02:A11-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                     +     1.0 02:A12-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                     +     1.0 02:A13-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                  SUM=     1.0 01:corrig      55019.59  129.561 No_date   36:17   34.16  n/a     .000
R0050:C00384-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     SAVE HYD              1.0 01:corrig      55019.59  129.561 No_date   36:17   34.16  n/a     .000
       fname :corrig.0050
       remark:Total Flows at Corrigan Pond
#****************************************************************************
#    Corrigan Pond 1
#    - Rating curve obtained from Barrhaven South MSS modeling
#    - Tributary Drainage Area to MSS Pond 1 = 145 ha
#****************************************************************************
#
# Hydrograph from Corrigan Drain routed to Jockvale Road
# Channel X-Section obtained from RVCA Hydraulic Model - Station 2462
#
R0050:C00385-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE CHANNEL   ->    1.0 02:corrig      55019.59  129.561 No_date   36:17   34.16  n/a     .000
      [RDT= 1.00] out<-    1.0 01:N_MI        55019.59  129.543 No_date   36:20   34.16  n/a     .000
       [L/S/n=  580./ .445/.045]
       {Vmax= 2.080:Dmax= 2.001}
#****************************************************************************
#    Catchment MILLS
#    - To SWM Facility north of the Jock
#    - Primarily residental development
#****************************************************************************
R0050:C00386-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:MILLS         175.99   17.756 No_date   28:06   50.66 .622     .000
       [XIMP=.38:TIMP=.38]
       [LOSS= 2 :CN= 74.0]
       [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI=1118.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 36.67: SMAX=244.49: SK= .010]
#****************************************************************************
#    Chapman Mills SWM Pond
#    - Rating curve obtained from CCL hydraulic modeling
#****************************************************************************
R0050:C00387-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE RESERVOIR ->    1.0 02:MILLS         175.99   17.756 No_date   28:06   50.66  n/a     .000
                out <=     1.0 01:MILL_P        153.87    4.050 No_date   28:11   50.66  n/a     .000
           overflow <=     1.0 03:MIL-OV         22.12   12.440 No_date   28:11   50.66  n/a     .000
      {MxStoUsed=.2310E+01  m3, TotOvfVol=.1121E+01  m3, N-Ovf=    2, TotDurOvf=    1.hrs}
R0050:C00388-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:N_MI        55019.59  129.543 No_date   36:20   34.16  n/a     .000
                     +     1.0 02:MIL-OV         22.12   12.440 No_date   28:11   50.66  n/a     .000
                     +     1.0 02:MILL_P        153.87    4.050 No_date   28:11   50.66  n/a     .000
                  SUM=     1.0 01:SN_MI       55195.58  130.186 No_date   36:19   34.21  n/a     .000
R0050:C00389-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     SAVE HYD              1.0 01:SN_MI       55195.58  130.186 No_date   36:19   34.21  n/a     .000
       fname :SN_MI.0050
       remark:Total Flows at Jockvale Road
#
# Hydrograph from Jockvale Road routed to Heart's Desire
# Channel X-Section obtained from RVCA Hydraulic Model - Station 689
#
R0050:C00390-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE CHANNEL   ->    1.0 02:SN_MI       55195.58  130.186 No_date   36:19   34.21  n/a     .000
      [RDT= 1.00] out<-    1.0 01:N_DE        55195.58  129.897 No_date   36:32   34.21  n/a     .000
       [L/S/n= 1962./ .223/.045]
       {Vmax= 1.586:Dmax= 2.514}
#****************************************************************************
#    Catchment DESIRE
#    - To Jock River (north of the Jock)
#    - Rural-estate subdivision (Heart's Desire Community)
#****************************************************************************
R0050:C00391-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:DESIRE         23.78    2.563 No_date   28:03   46.85 .575     .000
       [XIMP=.25:TIMP=.25]
       [LOSS= 2 :CN= 77.0]
       [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 400.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 31.15: SMAX=207.66: SK= .010]
#****************************************************************************
#    Catchment JOCKVA
#    - To Jockvale SWM Facility
#    - Residential development & golf course
#    - JFSA 2021-01-11 update JOCKVA after updating CORRIG as per IBI GROUP, July 2008.
#      JOCKVA area became 225.13 ha instead of 257.63 ha. JOCKVA separated into two areas JOCKVA and EX-LAND 32.5 ha as
#****************************************************************************
R0050:C00392-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:JOCKVA        225.13   25.253 No_date   28:07   56.33 .691     .000
       [XIMP=.50:TIMP=.50]
       [LOSS= 2 :CN= 74.0]
       [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI=1311.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 36.67: SMAX=244.49: SK= .010]
R0050:C00393-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:EX-LAND-MN     31.74    2.275 No_date   27:49   56.55  n/a     .000
                     +     1.0 02:JOCKVA        225.13   25.253 No_date   28:07   56.33  n/a     .000
                     +     1.0 02:B2-MJ            .00     .000 No_date    0:00     .00  n/a     .000
                     +     1.0 02:B3-MJ            .02     .083 No_date   28:09   56.26  n/a     .000
                  SUM=     1.0 01:JOCKVA-TO     256.89   27.528 No_date   28:07   56.36  n/a     .000
R0050:C00394-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     SAVE HYD              1.0 01:JOCKVA-TO     256.89   27.528 No_date   28:07   56.36  n/a     .000
       fname :JOCKVA-TO.0050
       remark:Total Flows at KB first pond
#****************************************************************************
#    Jockvale SWM Facility
#    - Rating curve obtained from Jockvale Servicing Study (CCL 1999)
#****************************************************************************
R0050:C00395-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE RESERVOIR ->    1.0 02:JOCKVA-TO     256.89   27.528 No_date   28:07   56.36  n/a     .000
                out <=     1.0 01:JOCK_P        256.89   10.991 No_date   28:38   56.36  n/a     .000
           overflow <=     1.0 03:JO-OVF           .00     .000 No_date    0:00     .00  n/a     .000
      {MxStoUsed=.5928E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00396-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:N_DE        55195.58  129.897 No_date   36:32   34.21  n/a     .000
                     +     1.0 02:DESIRE         23.78    2.563 No_date   28:03   46.85  n/a     .000
                     +     1.0 02:JO-OVF           .00     .000 No_date    0:00     .00  n/a     .000
                     +     1.0 02:JOCK_P        256.89   10.991 No_date   28:38   56.36  n/a     .000
                  SUM=     1.0 01:SN_DE       55476.26  130.865 No_date   36:30   34.32  n/a     .000
R0050:C00397-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     SAVE HYD              1.0 01:SN_DE       55476.26  130.865 No_date   36:30   34.32  n/a     .000
       fname :SN_DE.0050
       remark:Total Flows at Heart's Desire
#
# Hydrograph from Heart's Desire routed to Rideau River
# Channel X-Section obtained from RVCA Hydraulic Model - Station 0
#
R0050:C00398-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE CHANNEL   ->    1.0 02:SN_DE       55476.26  130.865 No_date   36:30   34.32  n/a     .000
      [RDT= 1.00] out<-    1.0 01:N1          55476.26  130.849 No_date   36:34   34.32  n/a     .000
       [L/S/n=  563./ .967/.045]
       {Vmax= 2.136:Dmax= 1.260}
#****************************************************************************
#    Catchment S-2
#    - To Jock River (north and south)
#    - Undeveloped floodplain and river
#****************************************************************************
R0050:C00399-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS NASHYD     1.0 01:S-2           102.94    4.795 No_date   28:20   35.39 .434     .000
       [CN= 72.0: N= 3.00: Tp=  .40]
       [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
       [InterEventTime=  12.00]
R0050:C00400-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:N1          55476.26  130.849 No_date   36:34   34.32  n/a     .000
                     +     1.0 02:S-2           102.94    4.795 No_date   28:20   35.39  n/a     .000
                  SUM=     1.0 01:SN_N1       55579.20  131.124 No_date   36:33   34.32  n/a     .000
R0050:C00401-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     SAVE HYD              1.0 01:SN_N1       55579.20  131.124 No_date   36:33   34.32  n/a     .000
       fname :SN_N1.0050
       remark:Total Flows at Rideau River
############################################################################
  ** END OF RUN :   99
************************************************************************************************
 RUN#:COMMAND#
R0100:C00001-------------------------------------------------------------------------------------
      START
       [TZERO =    .00 hrs on        0]
       [METOUT=   2    (1=imperial, 2=metric output)]
       [NSTORM=   1 ]
       [NRUN  = 0100 ]
#****************************************************************************
#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
#****************************************************************************
#  Project Name: [Jock River]    Project Number: [1474-16]
#  Date         : 04-03-2021
#  Modeller     : [M.M.]
#  Company      : JFSAinc.
#  License #    :  2549237
#****************************************************************************
# CALIBRATION OF SUMMER MODEL PARAMETERS
# USING CONTINUOUS SIMULATIONS
# Rainfall data from JFSA raingauge installed at site + other gauges by the City
# Use data collected from May 1st to July 14, 2003
# 2020-11-30 change TMJSTO in COMPUTE DUALHYD (TMJSTO = 0.1 instead of 0.0001)
# 2020-12-01 correct pond curve values
# 2020-12-01 change W_CLAR_BRAZ XIMP to 0.55, SLPI=[0.5](%) (impervious slope), and LGI up to 700m
# 2021-02-19 Change the slope for ROUTE CHANNEL Station 2462 (NHYDout=["N_TO"] ,NHYDin=["SN_TO"]) from 0.033 % (as per S
# 2021-02-19 Change the slope for ROUTE CHANNEL Station 5002 (NHYDout=["N_WC"] ,NHYDin=["SN_CE"]) from 0.01 % (as per St
# ---------------------------------------------------------------------------
R0100:C00002-------------------------------------------------------------------------------------
      READ STORM
       Filename = storm.001
       Comment  = Pluie SCS de 24 hres 1:100 ans pour Ottawa CDA
       [SDT=10.00:SDUR=  24.00:PTOT=  88.57]
R0100:C00003-------------------------------------------------------------------------------------
      MODIFY STORM
       [RFACT=  1.00:TSHIFT= 960.00 min]
       [SDT=10.00:SDUR=  40.00:PTOT=  88.57]
R0100:C00004-------------------------------------------------------------------------------------
      DEFAULT VALUES
       Filename = T:\PROJ\1474-16\Design\20201026-QuantityControlAnalysis\SWMHYMO\SMR-Model\updated3\CitiGate.DEF
       ICASEdv  = 1 (read and print data)
       FileTitle= File comment: [Based onvarious calibration exercises in Onta
                  THE FOLLOWING PARAMETERS ARE USED IN THE DESIGN STANDHYD COM
       Horton's infiltration equation parameters:
       [Fo= 76.20 mm/hr] [Fc=13.20 mm/hr] [DCAY= 4.14 /hr] [F=  .00 mm]
       Parameters for PERVIOUS surfaces in STANDHYD:
       [IAper=   4.67 mm] [LGP=50.00 m] [MNP= .250]
       Parameters for IMPERVIOUS surfaces in STANDHYD:
       [IAimp=   1.57 mm] [CLI= 1.50]   [MNI= .013]
       Parameters used in NASHYD:
       [Ia=   4.67 mm] [N= 3.00]
       Average monthly Pan Evaporation data in    (mm)
   JAN   FEB   MAR   APR   MAY   JUN   JUL   AUG   SEP   OCT   NOV   DEC
   .00   .00   .00   .00   .00   .00   .00   .00   .00   .00   .00   .00
       Average monthly Potential Evapotranspiration in    (mm)
   JAN   FEB   MAR   APR   MAY   JUN   JUL   AUG   SEP   OCT   NOV   DEC
   .00   .00   .00   .00   .00   .00   .00   .00   .00   .00   .00   .00
R0100:C00005-------------------------------------------------------------------------------------
      COMPUTE API
       [APIini= 50.00: APIkdy= .8500: APIkdt= .9989]
       {APImax=119.84: APIavg= 69.19: APImin= 44.87}
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.32
R0100:C00006-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS NASHYD     1.0 01:JR_HW        3680.00   21.616 No_date   36:52   35.18 .397     .000
       [CN= 64.0: N= 3.00: Tp= 7.13]
       [IaREC= 4.00: SMIN= 57.05: SMAX=380.32: SK= .010]
       [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.32
R0100:C00007-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS NASHYD     1.0 01:SW_13         971.00    8.203 No_date   32:33   32.84 .371     .000
       [CN= 61.0: N= 3.00: Tp= 3.76]
       [IaREC= 4.00: SMIN= 64.50: SMAX=430.01: SK= .010]
       [InterEventTime=  12.00]
#
```

```
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.80
R0100:C00008------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:JR_GWM      3074.00   10.428 No_date   39:59   28.29 .319     .000
      [CN= 55.0: N= 3.00: Tp=11.33]
      [IaREC= 4.00: SMIN= 83.24: SMAX=554.96: SK= .010]
      [InterEventTime=  12.00]
R0100:C00009------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:JR_ASH      1781.00   19.695 No_date   32:38   42.49 .480     .000
      [CN= 72.0: N= 3.00: Tp= 3.91]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
R0100:C00010------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_11        500.00   10.735 No_date   29:21   36.76 .415     .000
      [CN= 66.0: N= 3.00: Tp= 1.24]
      [IaREC= 4.00: SMIN= 52.62: SMAX=350.79: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.80
R0100:C00011------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:NN_CK       1917.00   14.496 No_date   34:24   36.76 .415     .000
      [CN= 66.0: N= 3.00: Tp= 5.29]
      [IaREC= 4.00: SMIN= 52.62: SMAX=350.79: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.52
R0100:C00012------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_10       5666.00   37.663 No_date   37:48   42.49 .480     .000
      [CN= 72.0: N= 3.00: Tp= 8.00]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.75
R0100:C00013------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:KG_CK       8376.00   36.118 No_date   39:59   36.76 .415     .000
      [CN= 66.0: N= 3.00: Tp=11.66]
      [IaREC= 4.00: SMIN= 52.62: SMAX=350.79: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.68
R0100:C00014------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_9        1132.00   16.501 No_date   30:52   40.82 .461     .000
      [CN= 70.0: N= 3.00: Tp= 2.51]
      [IaREC= 4.00: SMIN= 43.07: SMAX=287.10: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.82
R0100:C00015------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:NC_CK       4464.00   18.060 No_date   39:59   33.61 .380     .000
      [CN= 62.0: N= 3.00: Tp=11.32]
      [IaREC= 4.00: SMIN= 61.90: SMAX=412.66: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.80
R0100:C00016------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_8         131.00    3.259 No_date   28:57   34.39 .388     .000
      [CN= 63.0: N= 3.00: Tp=  .90]
      [IaREC= 4.00: SMIN= 59.42: SMAX=396.11: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.65
R0100:C00017------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:HB_DR       3854.00   21.238 No_date   38:28   36.76 .415     .000
      [CN= 66.0: N= 3.00: Tp= 8.42]
      [IaREC= 4.00: SMIN= 52.62: SMAX=350.79: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.82
R0100:C00018------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_7        3197.00   16.421 No_date   36:21   29.79 .336     .000
      [CN= 57.0: N= 3.00: Tp= 6.65]
      [IaREC= 4.00: SMIN= 76.32: SMAX=508.81: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.75
R0100:C00019------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_6         165.00    1.511 No_date   33:01   37.57 .424     .000
      [CN= 67.0: N= 3.00: Tp= 4.18]
      [IaREC= 4.00: SMIN= 50.55: SMAX=336.97: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.67
R0100:C00020------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:VG_DR       1332.00   10.882 No_date   35:10   42.49 .480     .000
      [CN= 72.0: N= 3.00: Tp= 5.95]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
R0100:C00021------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_5         224.00    9.576 No_date   28:44   47.62 .538     .000
      [CN= 77.0: N= 3.00: Tp=  .75]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.20
R0100:C00022------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:FL_CK       4945.00   52.056 No_date   33:16   44.17 .499     .000
      [CN= 74.0: N= 3.00: Tp= 4.45]
      [IaREC= 4.00: SMIN= 36.67: SMAX=244.49: SK= .010]
      [InterEventTime=  12.00]
R0100:C00023------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_5A2        20.00    1.097 No_date   28:35   52.06 .588     .000
      [CN= 81.0: N= 3.00: Tp=  .62]
      [IaREC= 4.00: SMIN= 25.21: SMAX=168.09: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.61
R0100:C00024------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_5A1      1412.00   10.184 No_date   37:44   45.88 .518     .000
      [CN= 75.0: N= 3.00: Tp= 8.00]
      [IaREC= 4.00: SMIN= 33.81: SMAX=225.43: SK= .010]
      [InterEventTime=  12.00]
R0100:C00025------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_4         585.00   14.953 No_date   29:55   52.06 .588     .000
      [CN= 81.0: N= 3.00: Tp= 1.75]
      [IaREC= 4.00: SMIN= 25.21: SMAX=168.09: SK= .010]
      [InterEventTime=  12.00]
R0100:C00026------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:LM_CK       1021.00   19.782 No_date   30:45   51.16 .578     .000
      [CN= 80.0: N= 3.00: Tp= 2.46]
      [IaREC= 4.00: SMIN= 26.32: SMAX=175.50: SK= .010]
      [InterEventTime=  12.00]
R0100:C00027------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_2         177.00    7.567 No_date   28:44   47.62 .538     .000
      [CN= 77.0: N= 3.00: Tp=  .75]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0100:C00028------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SM_DR       1122.00   17.981 No_date   31:42   52.06 .588     .000
      [CN= 81.0: N= 3.00: Tp= 3.25]
      [IaREC= 4.00: SMIN= 25.21: SMAX=168.09: SK= .010]
      [InterEventTime=  12.00]
R0100:C00029------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:MO_DR       2737.00   40.730 No_date   31:28   46.75 .528     .000
      [CN= 76.0: N= 3.00: Tp= 3.03]
      [IaREC= 4.00: SMIN= 32.46: SMAX=216.39: SK= .010]
      [InterEventTime=  12.00]
#
# Routing hydrographs
#
# Starting with the addition of Jock River Headwater and Subwatershed 13
#
R0100:C00030------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:JR_HW       3680.00   21.616 No_date   36:52   35.18  n/a     .000
                    +     1.0 02:SW_13        971.00    8.203 No_date   32:33   32.84  n/a     .000
                 SUM=     1.0 01:S_N13       4651.00   27.660 No_date   35:21   34.69  n/a     .000
#
# Sum of hydrographs from Node 13 routed to Node 13A
# (Approximated cross-section - see cross-section 258)
# Use n=0.04 for summer conditions and n=0.025 for spring conditions
#
R0100:C00031------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N13       4651.00   27.660 No_date   35:21   34.69  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N13A        4651.00   22.598 No_date   38:56   34.69  n/a     .000
      [L/S/n= 9074./ .022/.040]
      {Vmax=  .598:Dmax= 4.178}
#
# Addition of Subwatershed Jock River at Goodwood Marsh to Node 13A
#
R0100:C00032------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N13A        4651.00   22.598 No_date   38:56   34.69  n/a     .000
                    +     1.0 02:JR_GWM      3074.00   10.428 No_date   39:59   28.29  n/a     .000
                 SUM=     1.0 01:SN13A       7725.00   32.845 No_date   39:44   32.14  n/a     .000
#
# Insertion of a reservoir to simulate the effects of the Goodwood Marsh
#
R0100:C00033------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:SN13A       7725.00   32.845 No_date   39:44   32.14  n/a     .000
                out <=    1.0 01:RES_GM      7725.00    3.950 No_date   62:26   32.14  n/a     .000
     {MxStoUsed=.1796E+03  m3}
#
R0100:C00034------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:RES_GM      7725.00    3.950 No_date   62:26   32.14  n/a     .000
      fname :H_RESGM
      remark:Outflow from Res GM
# Output of Reservoir Goodwood Marsh routed from Node 13A to Node 12
# (Approximated cross-section - see cross-section 258)
# Use n=0.04 for summer conditions and n=0.025 for spring conditions
R0100:C00035------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:RES_GM      7725.00    3.950 No_date   62:26   32.14  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N12         7725.00    3.947 No_date   64:43   32.14  n/a     .000
      [L/S/n= 5926./ .076/.040]
      {Vmax=  .560:Dmax= 1.560}
#
# Addition of Subwatershed Jock River at Ashton to Node 12
#
R0100:C00036------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N12         7725.00    3.947 No_date   64:43   32.14  n/a     .000
                    +     1.0 02:JR_ASH      1781.00   19.695 No_date   32:38   42.49  n/a     .000
                 SUM=     1.0 01:S_N12       9506.00   21.745 No_date   32:41   34.08  n/a     .000
R0100:C00037------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:S_N12       9506.00   21.745 No_date   32:41   34.08  n/a     .000
      fname :H_SN12
      remark:flow at S_N12 near Ashton
#
# Sum of hydrographs from Node 12 routed to Node 11
# (Approximated cross-section - see cross-section 258)
# Use n=0.04 for summer conditions and n=0.025 for spring conditions
#
# Sum of hydrographs from Node 12 routed to Node 11 with Dummy section 248
#
R0100:C00038------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N12       9506.00   21.745 No_date   32:41   34.08  n/a     .000
     [RDT= 1.00] out<-    1.0 01:Dum11       9506.00   21.522 No_date   32:57   34.08  n/a     .000
      [L/S/n=  972./ .054/.040]
      {Vmax=  .777:Dmax= 3.194}
#
# Addition of Subwatershed 11 and No Name Creek to Node 11
#
R0100:C00039------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:Dum11       9506.00   21.522 No_date   32:57   34.08  n/a     .000
                    +     1.0 02:SW_11        500.00   10.735 No_date   29:21   36.76  n/a     .000
                    +     1.0 02:NN_CK       1917.00   14.496 No_date   34:24   36.76  n/a     .000
                 SUM=     1.0 01:S_N11      11923.00   38.138 No_date   32:59   34.62  n/a     .000
#
# Sum of hydrographs from Node 11 routed to Node 10
# Section 1
#
R0100:C00040------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N11      11923.00   38.138 No_date   32:59   34.62  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N10        11923.00   23.609 No_date   39:19   34.62  n/a     .000
      [L/S/n=14028./ .157/.040]
      {Vmax=  .486:Dmax= 1.492}
#
# Addition of Subwatershed 10 to Node 10
#
R0100:C00041------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N10        11923.00   23.609 No_date   39:19   34.62  n/a     .000
                    +     1.0 02:SW_10       5666.00   37.663 No_date   37:48   42.49  n/a     .000
                 SUM=     1.0 01:S_N10      17589.00   61.058 No_date   38:16   37.16  n/a     .000
R0100:C00042------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:S_N10      17589.00   61.058 No_date   38:16   37.16  n/a     .000
      fname :H_SN10
      remark:flow at S_N10: N10 + SW_10
# Addition of Kings Creek to S_N10
#
R0100:C00043------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:S_N10      17589.00   61.058 No_date   38:16   37.16  n/a     .000
                    +     1.0 02:KG_CK       8376.00   36.118 No_date   39:59   36.76  n/a     .000
                 SUM=     1.0 01:S_N10A     25965.00   96.054 No_date   39:40   37.03  n/a     .000
#
# Sum of hydrographs from Node 10 routed to Node 9
# Section 2
#
R0100:C00044------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N10A     25965.00   96.054 No_date   39:40   37.03  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N9         25965.00   94.262 No_date   39:59   37.03  n/a     .000
      [L/S/n= 3982./ .075/.040]
      {Vmax=  .775:Dmax= 2.151}
#
# Addition of Subwatershed 9 and Nichols Creek to Node 9
#
R0100:C00045------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N9         25965.00   94.262 No_date   39:59   37.03  n/a     .000
                    +     1.0 02:SW_9        1132.00   16.501 No_date   30:52   40.83  n/a     .000
                    +     1.0 02:NC_CK       4464.00   18.060 No_date   39:59   33.61  n/a     .000
                 SUM=     1.0 01:S_N9       31561.00  115.681 No_date   39:59   36.68  n/a     .000
#
# Sum of hydrographs from Node 9 routed to Node 8
# Section 3
#
R0100:C00046------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N9       31561.00  115.681 No_date   39:59   36.68  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N8         31561.00  109.395 No_date   39:59   36.68  n/a     .000
      [L/S/n= 2269./ .088/.045]
      {Vmax=  .374:Dmax= 1.924}
#
# Addition of Subwatershed 8 and Hobb's Drain to Node 8
#
R0100:C00047------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N8         31561.00  109.395 No_date   39:59   36.68  n/a     .000
                    +     1.0 02:SW_8         131.00    3.259 No_date   28:57   34.39  n/a     .000
                    +     1.0 02:HB_DR       3854.00   21.238 No_date   38:28   36.76  n/a     .000
                 SUM=     1.0 01:S_N8       35546.00  130.593 No_date   39:59   36.68  n/a     .000
#
# Sum of hydrographs from Node 8 routed to Node 7
# Section 4
#
R0100:C00048------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N8       35546.00  130.593 No_date   39:59   36.68  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N7         35546.00  111.942 No_date   44:52   36.68  n/a     .000
      [L/S/n= 3750./ .053/.070]
      {Vmax=  .237:Dmax= 2.412}
#
# Addition of Subwatershed 7 to Node 7
#
R0100:C00049------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N7         35546.00  111.942 No_date   44:52   36.68  n/a     .000
                    +     1.0 02:SW_7        3197.00   16.421 No_date   36:21   29.79  n/a     .000
                 SUM=     1.0 01:S_N7       38743.00  120.740 No_date   43:36   36.11  n/a     .000
R0100:C00050------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:S_N7       38743.00  120.740 No_date   43:36   36.11  n/a     .000
      fname :H_SN7
      remark:flow at S_N7: N7 + SW_7
# Insertion of a reservoir to simulate the effects of the Richmond Fen.
# Storage area and volumes were estimated from available topo maps.
# Release rate from fen was assumed to be controlled by the downstream
# river cross-section for summer conditions.  It is was assumed that for up to
# 0.75 m of water, the main channel of the river provided the storage.  Above
# this depth, the wetland starts to signigicantly store water.
#
R0100:C00051------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:S_N7       38743.00  120.740 No_date   43:36   36.11  n/a     .000
                out <=    1.0 01:RES_RF     38743.00   62.351 No_date   58:25   36.11  n/a     .000
     {MxStoUsed=.5140E+03  m3}
R0100:C00052------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:RES_RF     38743.00   62.351 No_date   58:25   36.11  n/a     .000
      fname :H_ResRF
      remark:outflow of Richmond Fen
#
# Sum of hydrographs from Node 7 routed to Node 6
# Section 5
#
R0100:C00053------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:RES_RF     38743.00   62.351 No_date   58:25   36.11  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N6         38743.00   62.067 No_date   59:46   36.11  n/a     .000
      [L/S/n= 3056./ .082/.025]
      {Vmax=  .556:Dmax= 1.373}
#
# Addition of Subwatershed 6 and Van Gaal Drain to Node 6
#
R0100:C00054------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N6         38743.00   62.067 No_date   59:46   36.11  n/a     .000
                    +     1.0 02:SW_6         165.00    1.511 No_date   33:01   37.57  n/a     .000
                    +     1.0 02:VG_DR       1332.00   10.882 No_date   35:10   42.49  n/a     .000
                 SUM=     1.0 01:S_N6       40240.01   62.114 No_date   59:39   36.33  n/a     .000
#
# Sum of hydrographs from Node 6 routed to Node 5
# Section 6
#
R0100:C00055------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N6       40240.01   62.114 No_date   59:39   36.33  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N5         40240.01   61.991 No_date   60:21   36.33  n/a     .000
      [L/S/n= 1852./ .054/.035]
      {Vmax=  .494:Dmax= 1.468}
#
# Addition of Subwatershed 5 and Flowing Creek to Node 5
#
R0100:C00056------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N5         40240.01   61.991 No_date   60:21   36.33  n/a     .000
                    +     1.0 02:SW_5         224.00    9.576 No_date   28:44   47.62  n/a     .000
                    +     1.0 02:FL_CK       4945.00   52.056 No_date   33:16   44.17  n/a     .000
                 SUM=     1.0 01:S_N5       45409.01   80.898 No_date   34:11   37.24  n/a     .000
#
# Sum of hydrographs from Node 5 routed to Node 5A
# Section 7
#
R0100:C00057------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N5       45409.01   80.898 No_date   34:11   37.24  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N5A        45409.01   80.666 No_date   34:28   37.24  n/a     .000
      [L/S/n=  556./ .090/.040]
      {Vmax=  .546:Dmax= 1.353}
#
# Addition of Subwatershed 5A1 and Subwatershed 5A2 to Node 5A
#
R0100:C00058------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N5A        45409.01   80.666 No_date   34:28   37.24  n/a     .000
                    +     1.0 02:SW_5A2        20.00    1.097 No_date   28:35   52.06  n/a     .000
                    +     1.0 02:SW_5A1      1412.00   10.184 No_date   37:44   45.88  n/a     .000
                 SUM=     1.0 01:S_N5A      46841.01   89.756 No_date   34:38   37.51  n/a     .000
#
# Sum of hydrographs from Node 5A routed to Node 4
# Section 8
```

```
#
R0100:C00059------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N5A      46841.01   89.756 No_date   34:38   37.51  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N4         46841.01   85.943 No_date   36:10   37.51  n/a     .000
      [L/S/n= 4630./ .043/.035]
      {Vmax=  .904:Dmax= 3.866}
#
# Addition of Subwatershed 4 and Leamy Creek to Node 4
#
R0100:C00060------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N4         46841.01   85.943 No_date   36:10   37.51  n/a     .000
                    +     1.0 02:SW_4         585.00   14.953 No_date   29:55   52.06  n/a     .000
                    +     1.0 02:LM_CK       1021.00   19.782 No_date   30:45   51.16  n/a     .000
                 SUM=     1.0 01:S_N4       48447.00   96.618 No_date   35:12   37.97  n/a     .000
R0100:C00061------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:S_N4       48447.00   96.618 No_date   35:12   37.97  n/a     .000
      fname :S_N4.0100
      remark:flow at S_N4
#
# Sum of hydrographs from Node 4 routed to Node 2
# Section 9
#
R0100:C00062------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N4       48447.00   96.618 No_date   35:12   37.97  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N2         48447.00   96.322 No_date   35:13   37.97  n/a     .000
      [L/S/n= 1667./ .060/.040]
      {Vmax=  .944:Dmax= 3.929}
#
# Addition of Subwatershed 2 with Monohan Drain and Smith Drain to Node 2
#
R0100:C00063------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N2         48447.00   96.322 No_date   35:13   37.97  n/a     .000
                    +     1.0 02:SW_2         177.00    7.567 No_date   28:44   47.62  n/a     .000
                    +     1.0 02:SM_DR       1122.00   17.981 No_date   31:42   52.06  n/a     .000
                    +     1.0 02:MO_DR       2737.00   40.730 No_date   31:28   46.75  n/a     .000
                 SUM=     1.0 01:S_N2       52483.00  143.580 No_date   32:59   38.76  n/a     .000
R0100:C00064------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:S_N2       52483.00  143.580 No_date   32:59   38.76  n/a     .000
      fname :H_SN2
      remark:flow at S_N2 Jock River Gauge at Moodie Dr.
#
# Sum of hydrographs from Node 2 routed to Node 1
# Section 10
#
#******************************************************************************
#
# Hydrograph from Node 2 routed to Node 416
# Channel X-Section obtained from RVCA Hydraulic Model - Station 9025
#
R0100:C00065------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N2       52483.00  143.580 No_date   32:59   38.76  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N_416      52483.00  139.298 No_date   33:45   38.76  n/a     .000
      [L/S/n= 2327./ .050/.055]
      {Vmax=  .801:Dmax= 3.814}
#******************************************************************************
#    Catchment SW-1a
#    - Portion of RVCA catchment SW_1 outside of Reach 1 subwatershed
#    - Undeveloped agricultural land
#******************************************************************************
R0100:C00066------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_1a        536.42    7.274 No_date   31:14   40.95 .462     .000
      [CN= 72.0: N= 3.00: Tp= 2.79]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
R0100:C00067------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:S-1-Okeefe    44.93    1.446 No_date   29:06   45.95 .519     .000
      [CN= 77.0: N= 3.00: Tp= 1.05]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0100:C00068------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N_416      52483.00  139.298 No_date   33:45   38.76  n/a     .000
                    +     1.0 02:SW_1a        536.42    7.274 No_date   31:14   40.95  n/a     .000
                    +     1.0 02:S-1-Okeefe    44.93    1.446 No_date   29:06   45.95  n/a     .000
                 SUM=     1.0 01:SN_416     53064.36  145.020 No_date   33:31   38.79  n/a     .000
R0100:C00069------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_416     53064.36  145.020 No_date   33:31   38.79  n/a     .000
      fname :SN_416.0100
      remark:Total Flows at Highway 416
#
# Hydrograph from Node 416 routed to Node at Okeefe drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 7245
#
R0100:C00070------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_416     53064.36  145.020 No_date   33:31   38.79  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N_OK       53064.36  144.944 No_date   33:32   38.79  n/a     .000
      [L/S/n=  497./ .302/.055]
      {Vmax= 1.728:Dmax= 3.267}
#******************************************************************************
#    Catchment OKEEFE
#    - To O'Keefe drain (north of the Jock)
#    - Developed with assumed 43% imp.
#    - 2020-12-01 add Okeefe model (Area 513.02 HA) instead of current Okeefe (Area 513.02 HA)
#    - 2020-11-20 Okeefe detailed model was added as per the NOVATECH SWMHYMO model (Citi-Gate 2014).
#******************************************************************************
R0100:C00071------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:O-1           63.72    1.380 No_date   28:58   30.74 .347     .000
      [CN= 61.0: N= 3.00: Tp=  .90]
      [IaREC= 4.00: SMIN= 64.50: SMAX=430.01: SK= .010]
      [InterEventTime=  12.00]
R0100:C00072------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:O-1           63.72    1.380 No_date   28:58   30.74  n/a     .000
     [RDT= 1.00] out<-    1.0 01:O-1R          63.72    1.307 No_date   29:13   30.74  n/a     .000
      [L/S/n=  960./ .630/.043]
      {Vmax=  .926:Dmax=  .493}
R0100:C00073------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:O-2           28.61     .485 No_date   29:13   28.38 .320     .000
      [CN= 57.0: N= 3.00: Tp= 1.10]
      [IaREC= 4.00: SMIN= 76.32: SMAX=508.81: SK= .010]
      [InterEventTime=  12.00]
R0100:C00074------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:O-4           46.94     .650 No_date   28:59   21.79 .246     .000
      [CN= 49.0: N= 3.00: Tp=  .90]
      [IaREC= 4.00: SMIN=104.59: SMAX=697.25: SK= .010]
      [InterEventTime=  12.00]
R0100:C00075------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:O-1R          63.72    1.307 No_date   29:13   30.74  n/a     .000
                    +     1.0 02:O-2           28.61     .485 No_date   29:13   28.38  n/a     .000
                    +     1.0 02:O-4           46.94     .650 No_date   28:59   21.79  n/a     .000
                 SUM=     1.0 01:OKF-N        139.27    2.427 No_date   29:10   27.24  n/a     .000
R0100:C00076------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:OKF-N        139.27    2.427 No_date   29:10   27.24  n/a     .000
     [RDT= 1.00] out<-    1.0 01:OKF-NR       139.27    2.423 No_date   29:12   27.24  n/a     .000
      [L/S/n=  210./ .810/.043]
      {Vmax= 1.130:Dmax=  .796}
R0100:C00077------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:O-6           16.46     .220 No_date   28:45   18.67 .211     .000
      [CN= 43.0: N= 3.00: Tp=  .70]
      [IaREC= 4.00: SMIN=134.47: SMAX=896.47: SK= .010]
      [InterEventTime=  12.00]
R0100:C00078------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:O-3           39.67    1.454 No_date   28:21   32.90 .371     .000
      [XIMP=.15:TIMP=.30]
      [LOSS= 2 :CN= 50.0]
      [Pervious     area: IAper= 4.67:SLPP= .32:LGP= 440.:MNP=.035:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .32:LGI=1880.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 99.77: SMAX=665.12: SK= .010]
R0100:C00079------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:O-5           60.63    3.669 No_date   28:10   38.00 .429     .000
      [XIMP=.13:TIMP=.26]
      [LOSS= 2 :CN= 61.0]
      [Pervious     area: IAper= 4.67:SLPP=1.38:LGP= 550.:MNP=.035:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.38:LGI=1450.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 64.50: SMAX=430.01: SK= .010]
R0100:C00080------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:OKF-NR       139.27    2.423 No_date   29:12   27.24  n/a     .000
                    +     1.0 02:O-3           39.67    1.454 No_date   28:21   32.90  n/a     .000
                    +     1.0 02:O-5           60.63    3.669 No_date   28:10   38.00  n/a     .000
                    +     1.0 02:O-6           16.46     .220 No_date   28:45   18.67  n/a     .000
                 SUM=     1.0 01:PT1          256.03    5.938 No_date   28:19   30.11  n/a     .000
R0100:C00081------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:O-7            5.28     .117 No_date   28:37   25.16 .284     .000
      [CN= 54.0: N= 3.00: Tp=  .60]
      [IaREC= 4.00: SMIN= 87.01: SMAX=580.07: SK= .010]
      [InterEventTime=  12.00]
R0100:C00082------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:PT1          256.03    5.938 No_date   28:19   30.11  n/a     .000
                    +     1.0 02:O-7            5.28     .117 No_date   28:37   25.16  n/a     .000
                 SUM=     1.0 01:FF           261.31    6.036 No_date   28:19   30.01  n/a     .000
R0100:C00083------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:FF           261.31    6.036 No_date   28:19   30.01  n/a     .000
     [RDT= 1.00] out<-    1.0 01:DRAIN1       261.31    5.843 No_date   28:23   30.01  n/a     .000
      [L/S/n=  302./1.000/.043]
      {Vmax=  .853:Dmax=  .797}
R0100:C00084------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:D1             1.17     .110 No_date   28:12   50.22 .567     .000
      [CN= 84.0: N= 3.00: Tp=  .28]
      [IaREC= 4.00: SMIN= 21.09: SMAX=140.62: SK= .010]
      [InterEventTime=  12.00]
R0100:C00085------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A1             2.50     .572 No_date   28:01   70.42 .795     .000
      [XIMP=.68:TIMP=.85]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 224.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00086------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:A1             2.50     .572 No_date   28:01   70.42  n/a     .000
                 out <=   1.0 01:A1-STR         2.50     .173 No_date   28:17   70.42  n/a     .000
            overflow <=   1.0 03:A1-OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.7765E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00087------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:ST-2            .59     .115 No_date   28:00   55.78 .630     .000
      [XIMP=.46:TIMP=.57]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 109.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00088------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:ST-2            .59     .115 No_date   28:00   55.78  n/a     .000
                 out <=   1.0 01:ST2STR          .59     .053 No_date   28:13   55.78  n/a     .000
            overflow <=   1.0 03:ST2OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.5215E-02  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00089------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:O-8           60.55    1.639 No_date   29:04   38.99 .440     .000
      [CN= 69.0: N= 3.00: Tp= 1.00]
      [IaREC= 4.00: SMIN= 44.82: SMAX=298.82: SK= .010]
      [InterEventTime=  12.00]
R0100:C00090------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:O-8           60.55    1.639 No_date   29:04   38.99  n/a     .000
     [RDT= 1.00] out<-    1.0 01:O8PIPE        60.55    1.631 No_date   29:07   38.99  n/a     .000
      [L/S/n=  335./ .100/.013]
      {Vmax= 1.305:Dmax=  .697}
      {HGTH= 1.20:WDTH= 1.80}
R0100:C00091------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:DRAIN1       261.31    5.843 No_date   28:23   30.01  n/a     .000
                    +     1.0 02:D1             1.17     .110 No_date   28:12   50.22  n/a     .000
                    +     1.0 02:A1-STR         2.50     .173 No_date   28:17   70.42  n/a     .000
                    +     1.0 02:A1-OVF          .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:ST2STR          .59     .053 No_date   28:13   55.78  n/a     .000
                    +     1.0 02:ST2OVF          .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:O8PIPE        60.55    1.631 No_date   29:07   38.99  n/a     .000
                 SUM=     1.0 01:ST2-IN       326.12    7.203 No_date   28:33   32.11  n/a     .000
R0100:C00092------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A7             3.51     .784 No_date   28:01   70.42 .795     .000
      [XIMP=.68:TIMP=.85]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 265.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00093------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:A7             3.51     .784 No_date   28:01   70.42  n/a     .000
                 out <=   1.0 01:A7-STR         3.51     .240 No_date   28:18   70.42  n/a     .000
            overflow <=   1.0 03:A7-OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.1088E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00094------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:ST-3            .71     .138 No_date   28:00   55.78 .630     .000
      [XIMP=.46:TIMP=.57]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 119.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00095------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:ST-3            .71     .138 No_date   28:00   55.78  n/a     .000
                 out <=   1.0 01:ST3STR          .71     .064 No_date   28:13   55.78  n/a     .000
            overflow <=   1.0 03:ST3OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.6043E-02  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00096------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:ST2-IN       326.12    7.203 No_date   28:33   32.11  n/a     .000
                    +     1.0 02:A7-STR         3.51     .240 No_date   28:18   70.42  n/a     .000
                    +     1.0 02:A7-OVF          .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:ST3STR          .71     .064 No_date   28:13   55.78  n/a     .000
                    +     1.0 02:ST3OVF          .00     .000 No_date    0:00     .00  n/a     .000
                 SUM=     1.0 01:PT2ST3       330.34    7.487 No_date   28:31   32.57  n/a     .000
R0100:C00097------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:PT2ST3       330.34    7.487 No_date   28:31   32.57  n/a     .000
     [RDT= 1.00] out<-    1.0 01:DRAIN2       330.34    6.868 No_date   28:55   32.57  n/a     .000
      [L/S/n=  592./ .230/.043]
      {Vmax=  .611:Dmax= 1.215}
R0100:C00098------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:D2             2.28     .087 No_date   29:02   50.22 .567     .000
      [CN= 84.0: N= 3.00: Tp=  .99]
      [IaREC= 4.00: SMIN= 21.09: SMAX=140.62: SK= .010]
      [InterEventTime=  12.00]
R0100:C00099------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A17           12.04    2.382 No_date   28:03   70.42 .795     .000
      [XIMP=.68:TIMP=.85]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 491.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00100------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:A17           12.04    2.382 No_date   28:03   70.42  n/a     .000
                 out <=   1.0 01:A17STR        12.04     .801 No_date   28:24   70.42  n/a     .000
            overflow <=   1.0 03:A17OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.3671E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00101------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:ST-4            .35     .069 No_date   28:00   55.78 .630     .000
      [XIMP=.46:TIMP=.57]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=  84.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00102------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:ST-4            .35     .069 No_date   28:00   55.78  n/a     .000
                 out <=   1.0 01:ST4STR          .35     .032 No_date   28:13   55.78  n/a     .000
            overflow <=   1.0 03:ST4OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.3372E-02  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00103------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A18            5.30    1.139 No_date   28:01   70.42 .795     .000
      [XIMP=.68:TIMP=.85]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 326.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00104------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:A18            5.30    1.139 No_date   28:01   70.42  n/a     .000
                 out <=   1.0 01:A18STR         5.30     .360 No_date   28:20   70.42  n/a     .000
            overflow <=   1.0 03:A18OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.1636E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00105------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:DRAIN2       330.34    6.868 No_date   28:55   32.57  n/a     .000
                    +     1.0 02:D2             2.28     .087 No_date   29:02   50.22  n/a     .000
                    +     1.0 02:A17STR        12.04     .801 No_date   28:24   70.42  n/a     .000
                    +     1.0 02:A17OVF          .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:ST4STR          .35     .032 No_date   28:13   55.78  n/a     .000
                    +     1.0 02:ST4OVF          .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:A18STR         5.30     .360 No_date   28:20   70.42  n/a     .000
                    +     1.0 02:A18OVF          .00     .000 No_date    0:00     .00  n/a     .000
                 SUM=     1.0 01:PT3ST4       350.31    7.785 No_date   28:52   34.58  n/a     .000
R0100:C00106------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:PT3ST4       350.31    7.785 No_date   28:52   34.58  n/a     .000
     [RDT= 1.00] out<-    1.0 01:DRAIN3       350.31    7.474 No_date   29:08   34.58  n/a     .000
      [L/S/n=  525./ .230/.043]
      {Vmax=  .628:Dmax= 1.257}
R0100:C00107------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:D3             2.51     .132 No_date   28:43   54.04 .610     .000
      [CN= 86.0: N= 3.00: Tp=  .73]
      [IaREC= 4.00: SMIN= 17.43: SMAX=116.21: SK= .010]
      [InterEventTime=  12.00]
R0100:C00108------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:C1             3.41     .763 No_date   28:01   70.42 .795     .000
      [XIMP=.68:TIMP=.85]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 261.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00109------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:C1             3.41     .763 No_date   28:01   70.42  n/a     .000
                 out <=   1.0 01:C1-STR         3.41     .232 No_date   28:18   70.42  n/a     .000
            overflow <=   1.0 03:C1-OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.1056E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00110------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:ST-5            .45     .088 No_date   28:00   55.78 .630     .000
      [XIMP=.46:TIMP=.57]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=  95.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00111------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:ST-5            .45     .088 No_date   28:00   55.78  n/a     .000
                 out <=   1.0 01:ST5STR          .45     .041 No_date   28:13   55.78  n/a     .000
            overflow <=   1.0 03:ST5OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.4111E-02  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00112------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:DRAIN3       350.31    7.474 No_date   29:08   34.58  n/a     .000
                    +     1.0 02:D3             2.51     .132 No_date   28:43   54.04  n/a     .000
                    +     1.0 02:C1-STR         3.41     .232 No_date   28:18   70.42  n/a     .000
                    +     1.0 02:C1-OVF          .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:ST5STR          .45     .041 No_date   28:13   55.78  n/a     .000
                    +     1.0 02:ST5OVF          .00     .000 No_date    0:00     .00  n/a     .000
                 SUM=     1.0 01:ST5-E        356.68    7.731 No_date   29:07   35.08  n/a     .000
R0100:C00113------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:STRAND         7.59    1.163 No_date   28:08   68.85 .777     .000
      [XIMP=.64:TIMP=.85]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1230.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00114------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:STRAND         7.59    1.163 No_date   28:08   68.85  n/a     .000
                 out <=   1.0 01:S-POND         7.59     .200 No_date   29:01   68.85  n/a     .000
            overflow <=   1.0 03:S-OVF           .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.3382E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00115------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:ST5-E        356.68    7.731 No_date   29:07   35.08  n/a     .000
                    +     1.0 02:S-POND         7.59     .200 No_date   29:01   68.85  n/a     .000
                    +     1.0 02:S-OVF           .00     .000 No_date    0:00     .00  n/a     .000
                 SUM=     1.0 01:SSAOUT       364.27    7.924 No_date   29:06   35.79  n/a     .000
R0100:C00116------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SSAOUT       364.27    7.924 No_date   29:06   35.79  n/a     .000
      fname :SSAOUT.0100
      remark:SSAOUT
R0100:C00117------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:Area-A        66.75    9.945 No_date   28:08   67.64 .764     .000
      [XIMP=.64:TIMP=.80]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1155.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00118------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:Area-A        66.75    9.945 No_date   28:08   67.64  n/a     .000
      fname :Area-A.0100
```

```
      remark:SMWF-A Inflow
R0100:C00119------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:Area-A        66.75    9.945 No_date   28:08   67.64  n/a      .000
                out <=    1.0 01:SWMF-A        66.75    1.357 No_date   29:10   67.64  n/a      .000
           overflow <=    1.0 03:SWMAOV          .00     .000 No_date    0:00     .00  n/a      .000
     {MxStoUsed=.3051E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00120------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SWMF-A        66.75    1.357 No_date   29:10   67.64  n/a      .000
      fname :SWMF-A.0100
      remark:SMWF-A Outflow
R0100:C00121------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:SSAOUT       364.27    7.924 No_date   29:06   35.79  n/a      .000
                    +     1.0 02:SWMF-A        66.75    1.357 No_date   29:10   67.64  n/a      .000
                    +     1.0 02:SWMAOV          .00     .000 No_date    0:00     .00  n/a      .000
                 SUM=     1.0 01:PT4ST5       431.02    9.279 No_date   29:07   40.72  n/a      .000
R0100:C00122------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:C6             1.87     .433 No_date   28:01   70.42 .795      .000
      [XIMP=.68:TIMP=.85]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 193.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00123------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:C6             1.87     .433 No_date   28:01   70.42  n/a      .000
                out <=    1.0 01:C6-STR         1.87     .129 No_date   28:16   70.42  n/a      .000
           overflow <=    1.0 03:C6-OVF          .00     .000 No_date    0:00     .00  n/a      .000
     {MxStoUsed=.5845E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00124------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:C7             1.62     .381 No_date   28:00   70.42 .795      .000
      [XIMP=.68:TIMP=.85]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 180.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00125------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:C7             1.62     .381 No_date   28:00   70.42  n/a      .000
                out <=    1.0 01:C7-STR         1.62     .112 No_date   28:16   70.42  n/a      .000
           overflow <=    1.0 03:C7-OVF          .00     .000 No_date    0:00     .00  n/a      .000
     {MxStoUsed=.5036E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00126------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:ST-6            .41     .081 No_date   28:00   55.78 .630      .000
      [XIMP=.46:TIMP=.57]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=  91.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00127------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:ST-6            .41     .081 No_date   28:00   55.78  n/a      .000
                out <=    1.0 01:ST6STR          .41     .037 No_date   28:13   55.78  n/a      .000
           overflow <=    1.0 03:ST6OVF          .00     .000 No_date    0:00     .00  n/a      .000
     {MxStoUsed=.3877E-02  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00128------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:PT4ST5       431.02    9.279 No_date   29:07   40.72  n/a      .000
                    +     1.0 02:C6-STR         1.87     .129 No_date   28:16   70.42  n/a      .000
                    +     1.0 02:C6-OVF          .00     .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:C7-STR         1.62     .112 No_date   28:16   70.42  n/a      .000
                    +     1.0 02:C7-OVF          .00     .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:ST6STR          .41     .037 No_date   28:13   55.78  n/a      .000
                    +     1.0 02:ST6OVF          .00     .000 No_date    0:00     .00  n/a      .000
                 SUM=     1.0 01:PT5ST6       434.92    9.426 No_date   29:06   40.97  n/a      .000
R0100:C00129------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:PT5ST6       434.92    9.426 No_date   29:06   40.97  n/a      .000
     [RDT= 1.00] out<-    1.0 01:DRAIN4       434.92    9.061 No_date   29:16   40.97  n/a      .000
      [L/S/n=  324./ .100/.043]
      {Vmax=  .507:Dmax= 1.619}
R0100:C00130------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:D4             1.73     .112 No_date   28:33   57.07 .644      .000
      [CN= 88.0: N= 3.00: Tp=  .60]
      [IaREC= 4.00: SMIN= 14.94: SMAX= 99.61: SK= .010]
      [InterEventTime=  12.00]
R0100:C00131------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:Area-B        24.04    4.871 No_date   28:02   66.17 .747      .000
      [XIMP=.62:TIMP=.77]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=1.40:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.40:LGI= 693.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00132------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:Area-B        24.04    4.871 No_date   28:02   66.17  n/a      .000
                out <=    1.0 01:SWMF-B        24.04     .641 No_date   28:41   66.17  n/a      .000
           overflow <=    1.0 03:SWMBOVF         .00     .000 No_date    0:00     .00  n/a      .000
     {MxStoUsed=.9727E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00133------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:DRAIN4       434.92    9.061 No_date   29:16   40.97  n/a      .000
                    +     1.0 02:D4             1.73     .112 No_date   28:33   57.07  n/a      .000
                    +     1.0 02:SWMF-B        24.04     .641 No_date   28:41   66.17  n/a      .000
                    +     1.0 02:SWMBOVF         .00     .000 No_date    0:00     .00  n/a      .000
                 SUM=     1.0 01:D4-EX        460.69    9.722 No_date   29:15   42.35  n/a      .000
R0100:C00134------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:D4-EX        460.69    9.722 No_date   29:15   42.35  n/a      .000
     [RDT= 1.00] out<-    1.0 01:DRAIN5       460.69    9.564 No_date   29:26   42.35  n/a      .000
      [L/S/n=  413./ .160/.033]
      {Vmax=  .703:Dmax= 1.106}
R0100:C00135------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:D5             1.90     .104 No_date   28:40   54.04 .610      .000
      [CN= 86.0: N= 3.00: Tp=  .69]
      [IaREC= 4.00: SMIN= 17.43: SMAX=116.21: SK= .010]
      [InterEventTime=  12.00]
R0100:C00136------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:O-13SDF        9.74     .675 No_date   28:21   50.83 .574      .000
      [CN= 81.0: N= 3.00: Tp=  .43]
      [IaREC= 4.00: SMIN= 25.21: SMAX=168.09: SK= .010]
      [InterEventTime=  12.00]
R0100:C00137------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:O-13SDF        9.74     .675 No_date   28:21   50.83  n/a      .000
                out <=    1.0 01:SDF            9.74     .070 No_date   30:50   50.83  n/a      .000
           overflow <=    1.0 03:OVFSDF          .00     .000 No_date    0:00     .00  n/a      .000
     {MxStoUsed=.2813E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00138------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:DRAIN5       460.69    9.564 No_date   29:26   42.35  n/a      .000
                    +     1.0 02:D5             1.90     .104 No_date   28:40   54.04  n/a      .000
                    +     1.0 02:SDF            9.74     .070 No_date   30:50   50.83  n/a      .000
                 SUM=     1.0 01:PT6MC        472.33    9.694 No_date   29:26   42.57  n/a      .000
R0100:C00139------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:O-15          10.67     .940 No_date   28:13   49.72 .561      .000
      [CN= 82.0: N= 3.00: Tp=  .30]
      [IaREC= 4.00: SMIN= 23.09: SMAX=153.94: SK= .010]
      [InterEventTime=  12.00]
R0100:C00140------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:PT6MC        472.33    9.694 No_date   29:26   42.57  n/a      .000
                    +     1.0 02:O-15          10.67     .940 No_date   28:13   49.72  n/a      .000
                 SUM=     1.0 01:M-C          483.00    9.844 No_date   29:26   42.73  n/a      .000
R0100:C00141------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:M-C          483.00    9.844 No_date   29:26   42.73  n/a      .000
     [RDT= 1.00] out<-    1.0 01:O-14Ch       483.00    8.880 No_date   29:52   42.73  n/a      .000
      [L/S/n=  845./ .100/.033]
      {Vmax=  .556:Dmax= 1.861}
R0100:C00142------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:O-14           5.00     .722 No_date   28:04   49.72 .561      .000
      [CN= 82.0: N= 3.00: Tp=  .13]
      [IaREC= 4.00: SMIN= 23.09: SMAX=153.94: SK= .010]
      [InterEventTime=  12.00]
R0100:C00143------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:O-14Ch       483.00    8.880 No_date   29:52   42.73  n/a      .000
                    +     1.0 02:O-14           5.00     .722 No_date   28:04   49.72  n/a      .000
                 SUM=     1.0 01:OKEEFE       488.00    8.925 No_date   29:52   42.80  n/a      .000
#*****************************************************************************
#    Okeefe Pond
#    - Rating curve obtained assuming 40m3/ha in 24 hours for quality control
#      and a ratio of the catchment area to the West Clarke pond rating curve
#      from the MSS for the next coordinates
#*****************************************************************************
R0100:C00144------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:S-1-D2        18.67     .573 No_date   29:11   45.95 .519      .000
      [CN= 77.0: N= 3.00: Tp= 1.12]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0100:C00145------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:S-1-D3         6.79     .189 No_date   29:23   45.95 .519      .000
      [CN= 77.0: N= 3.00: Tp= 1.28]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0100:C00146------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N_OK       53064.36  144.944 No_date   33:32   38.79  n/a      .000
                    +     1.0 02:OKEEFE       488.00    8.925 No_date   29:52   42.80  n/a      .000
                    +     1.0 02:S-1-D2        18.67     .573 No_date   29:11   45.95  n/a      .000
                    +     1.0 02:S-1-D3         6.79     .189 No_date   29:23   45.95  n/a      .000
                 SUM=     1.0 01:SN_OK      53577.82  147.990 No_date   33:31   38.83  n/a      .000
R0100:C00147------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_OK      53577.82  147.990 No_date   33:31   38.83  n/a      .000
      fname :SN_OK.0100
      remark:Total Flows at Okeefe Drain
#
# Hydrograph from Node Okeefe routed to Node at Foster Drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 6215
#
R0100:C00148------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_OK      53577.82  147.990 No_date   33:31   38.83  n/a      .000
     [RDT= 1.00] out<-    1.0 01:N_FO       53577.82  147.849 No_date   33:32   38.83  n/a      .000
      [L/S/n= 1183./ .076/.035]
      {Vmax= 1.294:Dmax= 3.587}
#*****************************************************************************
#    Catchment FOSTER
#    - To Foster ditch (north of the Jock)
#    - Partially developed (medium density); remaining agricultural
#    - 2020-12-01 JFSA Foster area is 332 as per Foster SWMF Environmental Study Report, CH2MHILL, Aug 2013.
#    - 2020-12-01 decrease Foster drainage area from (373 HA) to (307.98 HA) after increasing Okeefe drainage area to (5
#    - 2021-02-12  update Foster area to 325.44 ha as measured from QGIS
#*****************************************************************************
R0100:C00149------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:FOSTER       325.44   36.526 No_date   28:10   65.13 .735      .000
      [XIMP=.55:TIMP=.55]
      [LOSS= 2 :CN= 74.0]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1473.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 36.67: SMAX=244.49: SK= .010]
#*****************************************************************************
#    Foster Pond
#    - Rating curve obtained assuming 40m3/ha in 24 hours for quality control
#      and a ratio of the catchment area to the West Clarke pond rating curve
#      from the MSS for the next coordinates
#*****************************************************************************
R0100:C00150------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:FOSTER       325.44   36.526 No_date   28:10   65.13  n/a      .000
                out <=    1.0 01:P_FOS        325.44    9.091 No_date   29:01   65.13  n/a      .000
           overflow <=    1.0 03:FO-OVF          .00     .000 No_date    0:00     .00  n/a      .000
     {MxStoUsed=.8792E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00151------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:P_FOS        325.44    9.091 No_date   29:01   65.13  n/a      .000
                    +     1.0 02:FO-OVF          .00     .000 No_date    0:00     .00  n/a      .000
                 SUM=     1.0 01:FOSTER-OUT   325.44    9.091 No_date   29:01   65.13  n/a      .000
#*****************************************************************************
R0100:C00152------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:W_CLAR_BRA    73.29   11.683 No_date   28:05   70.23 .793      .000
      [XIMP=.60:TIMP=.65]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 699.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0100:C00153------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:W_CLAR_BRA    73.29   11.683 No_date   28:05   70.23  n/a      .000
                out <=    1.0 01:MS_P10        73.29    1.240 No_date   29:12   70.23  n/a      .000
           overflow <=    1.0 03:P10-OVF         .00     .000 No_date    0:00     .00  n/a      .000
     {MxStoUsed=.2223E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00154------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:S-1-FO-D2      4.94     .154 No_date   29:10   45.95 .519      .000
      [CN= 77.0: N= 3.00: Tp= 1.10]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0100:C00155------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:FOSTER-OUT   325.44    9.091 No_date   29:01   65.13  n/a      .000
                    +     1.0 02:S-1-FO-D2      4.94     .154 No_date   29:10   45.95  n/a      .000
                 SUM=     1.0 01:980          330.38    9.242 No_date   29:01   64.84  n/a      .000
R0100:C00156------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:980          330.38    9.242 No_date   29:01   64.84  n/a      .000
      fname :980.0100
      remark:Total Flows at Station 980 on Foster Drain
#
# Hydrograph from Node Foster SWM (Station 980)to Node at station 520
# Channel X-Section obtained from RVCA Hydraulic Model - Station 980
#
R0100:C00157------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:980          330.38    9.242 No_date   29:01   64.84  n/a      .000
 *   [RDT= 1.00] out<-    1.0 01:980-out      330.38    8.718 No_date   29:20   64.84  n/a      .000
      [L/S/n=  460./ .043/.035]
      {Vmax=  .535:Dmax= 1.674}
R0100:C00158------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:S-1-FO-D1      5.11     .159 No_date   29:10   45.95 .519      .000
      [CN= 77.0: N= 3.00: Tp= 1.10]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0100:C00159------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:980-out      330.38    8.718 No_date   29:20   64.84  n/a      .000
                    +     1.0 02:S-1-FO-D1      5.11     .159 No_date   29:10   45.95  n/a      .000
                 SUM=     1.0 01:520          335.49    8.875 No_date   29:20   64.55  n/a      .000
R0100:C00160------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:520          335.49    8.875 No_date   29:20   64.55  n/a      .000
      fname :520.0100
      remark:Total Flows at Sation 520 on Foster Drain
# Hydrograph from Node at Station 520 (Foster Drain) to Node at station 6016 (Jock River)
# Channel X-Section obtained from RVCA Hydraulic Model - Station 520
#
R0100:C00161------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:520          335.49    8.875 No_date   29:20   64.55  n/a      .000
     [RDT= 1.00] out<-    1.0 01:520-out      335.49    8.790 No_date   29:26   64.55  n/a      .000
      [L/S/n=  860./ .587/.035]
      {Vmax= 1.604:Dmax=  .806}
R0100:C00162------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:S-1-FO-F-D    14.96     .496 No_date   29:03   45.95 .519      .000
      [CN= 77.0: N= 3.00: Tp= 1.01]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0100:C00163------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-D8         5.27    1.102 No_date   28:00   70.58 .797      .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .75:LGI= 187.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0100:C00164------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:S-1-A         75.88    3.578 No_date   28:36   45.95 .519      .000
      [CN= 77.0: N= 3.00: Tp=  .62]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0100:C00165------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:W_CLAR_UND    35.65    1.108 No_date   29:10   45.95 .519      .000
      [CN= 77.0: N= 3.00: Tp= 1.10]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0100:C00166------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N_FO       53577.82  147.849 No_date   33:32   38.83  n/a      .000
                    +     1.0 02:520-out      335.49    8.790 No_date   29:26   64.55  n/a      .000
                    +     1.0 02:MS_P10        73.29    1.240 No_date   29:12   70.23  n/a      .000
                    +     1.0 02:P10-OVF         .00     .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:W_CLAR_UND    35.65    1.108 No_date   29:10   45.95  n/a      .000
                    +     1.0 02:S-1-FO-F-D    14.96     .496 No_date   29:03   45.95  n/a      .000
                    +     1.0 02:S-1-D8         5.27    1.102 No_date   28:00   70.58  n/a      .000
                    +     1.0 02:S-1-A         75.88    3.578 No_date   28:36   45.95  n/a      .000
                 SUM=     1.0 01:SN_FO      54118.36  153.577 No_date   33:32   39.05  n/a      .000
R0100:C00167------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_FO      54118.36  153.577 No_date   33:32   39.05  n/a      .000
      fname :SN_FO.0100
      remark:Total Flows at Foster Drain
# Hydrograph from Node Foster routed to Node at Cedarview Road
# Channel X-Section obtained from RVCA Hydraulic Model - Station 6016
#
R0100:C00168------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_FO      54118.36  153.577 No_date   33:32   39.05  n/a      .000
 *   [RDT= 1.00] out<-    1.0 01:N_CE       54118.36  153.492 No_date   33:33   39.05  n/a      .000
      [L/S/n=  159./ .082/.035]
      {Vmax= 1.456:Dmax= 4.474}
#*****************************************************************************
#    Catchment S-1
#    - To Jock River (north and south of Jock)
#    - Primarily agricultural fields; portion of sand quarry
#*****************************************************************************
R0100:C00169------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:S-1-B         55.36    3.260 No_date   28:23   45.95 .519      .000
      [CN= 77.0: N= 3.00: Tp=  .45]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
#    -  JFSA 2021-02-24 change the name from S-1-BCDC to S-1-A and S-1-B. Change their TP values based on the new areas
#    -  JFSA 2021-02-24 "S-1-BCDC-1" and "S-1-BCDC-2" are not existing anymore. "S-1-BCDC-1" is part of "S-1-FO-D2" and
#    -  JFSA 2021-01-19, after adding Greenbank pond, "S-1-BCDC-3" is not existing anymore
R0100:C00170------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:S-1-D1        21.67     .689 No_date   29:07   45.95 .519      .000
      [CN= 77.0: N= 3.00: Tp= 1.07]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0100:C00171------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:S-1-D4         3.28     .102 No_date   29:10   45.95 .519      .000
      [CN= 77.0: N= 3.00: Tp= 1.10]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0100:C00172------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:S-1-D5        12.84     .399 No_date   29:10   45.95 .519      .000
      [CN= 77.0: N= 3.00: Tp= 1.10]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0100:C00173------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:S-1-D6         1.75     .054 No_date   29:10   45.95 .519      .000
      [CN= 77.0: N= 3.00: Tp= 1.10]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0100:C00174------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:S-1-D7         2.03     .063 No_date   29:10   45.95 .519      .000
      [CN= 77.0: N= 3.00: Tp= 1.10]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
#    Catchment W_CLAR
#    - To West Clarke Drain (south of the Jock)
#    - Subdivision with 43% imp. as per Barrhaven South MSS
#    - 2020-11-30 update CLARKE Tributary Drainage Area to  = 121 ha based on P598(04)-11
#    - 2020-11-30 split CLARKE Drainage Area to MAJOR and ALL
#*****************************************************************************
R0100:C00175------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:W_CLAR_MJ      1.77     .332 No_date   28:00   66.20 .747      .000
      [XIMP=.46:TIMP=.59]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 109.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
# 5-Year + 12% Capture
R0100:C00176------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:W_CLAR_MJ      1.77     .332 No_date   28:00   66.20  n/a      .000
                out <=    1.0 01:W_CLAR_MJn     1.69     .213 No_date   27:52   66.22  n/a      .000
           overflow <=    1.0 03:W_CLAR_MJj      .08     .115 No_date   28:01   66.20  n/a      .000
     {MxStoUsed=.1530E-03  m3, TotOvfVol=.5337E-02  m3, N-Ovf=    1, TotDurOvf=    0.hrs}
R0100:C00177------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:W_CLAR_ALL   119.40   19.638 No_date   28:04   70.23 .793      .000
      [XIMP=.60:TIMP=.65]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 892.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0100:C00178------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:W_CLAR_ALL   119.40   19.638 No_date   28:04   70.23  n/a      .000
                    +     1.0 02:W_CLAR_MJj      .08     .115 No_date   28:01   66.20  n/a      .000
                 SUM=     1.0 01:W_CLAR       119.48   19.657 No_date   28:04   70.22  n/a      .000
```

```
R0100:C00179------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:W_CLAR       119.48   19.657 No_date   28:04   70.22  n/a     .000
      fname :W_CLAR.0100
      remark:Total Flows to West Clarke
#****************************************************************************
#    West Clarke Pond 2
#    - Rating curve obtained from Barrhaven South MSS modeling
#    - Tributary Drainage Area to MSS Pond 2 = 241 ha
#****************************************************************************
R0100:C00180------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:W_CLAR       119.48   19.657 No_date   28:04   70.22  n/a     .000
                out <=    1.0 01:MS_P2        119.48   13.064 No_date   28:13   70.22  n/a     .000
           overflow <=    1.0 03:P2-OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.3189E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
#****************************************************************************
R0100:C00181------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N_CE       54118.36  153.492 No_date   33:33   39.05  n/a     .000
                    +     1.0 02:S-1-D4         3.28     .102 No_date   29:10   45.95  n/a     .000
                    +     1.0 02:S-1-D5        12.84     .399 No_date   29:10   45.95  n/a     .000
                    +     1.0 02:MS_P2        119.48   13.064 No_date   28:13   70.22  n/a     .000
                    +     1.0 02:P2-OVF          .00     .000 No_date    0:00     .00  n/a     .000
                 SUM=     1.0 01:SN_CE      54253.96  154.467 No_date   33:33   39.12  n/a     .000
R0100:C00182------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_CE      54253.96  154.467 No_date   33:33   39.12  n/a     .000
      fname :SN_CE.0100
      remark:Total Flows before Station 5737 on Jock River
# Channel X-Section obtained from RVCA Hydraulic Model - Station 5737
# JFSA 2021-02-25 add station 5737 before station 5002. Station 5737 was extracted from the HEC-RAS model T:\PROJ\1474-1
# JFSA 2021-03-02  change the slope to 0.1% instead of 0.0175 to stabilize the model
R0100:C00183------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_CE      54253.96  154.467 No_date   33:33   39.12  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:5737       54253.96  147.337 No_date   35:20   39.12  n/a     .000
      [L/S/n=  270./ .018/.035]
      {Vmax=  .872:Dmax= 5.575}
R0100:C00184------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:5737       54253.96  147.337 No_date   35:20   39.12  n/a     .000
                    +     1.0 02:S-1-D1        21.67     .689 No_date   29:07   45.95  n/a     .000
                    +     1.0 02:S-1-D6         1.75     .054 No_date   29:10   45.95  n/a     .000
                    +     1.0 02:S-1-D7         2.03     .063 No_date   29:10   45.95  n/a     .000
                 SUM=     1.0 01:5002       54279.41  147.438 No_date   35:20   39.13  n/a     .000
R0100:C00185------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:5002       54279.41  147.438 No_date   35:20   39.13  n/a     .000
      fname :5002.0100
      remark:Total Flows before Station 5002 on Jock River
# Hydrograph from Node Cedarview Road routed to Node at West Clarke Drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 5002
# JFSA 2021-02-19 Change the slope from 0.01 % (as per Stantec Report 2007) to 0.0255 % so the model will be more stable
# JFSA 2021-02-19 Change to three ROUTE CHANNEL with length 275 m each instead of one with 825 m length so the model wil
# JFSA 2021-02-26 change the length of 5002 route channel from 825 m to 736 m. That is because of adding station 5737 be
R0100:C00186------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:5002       54279.41  147.438 No_date   35:20   39.13  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:N_WCa      54279.41  147.366 No_date   35:29   39.13  n/a     .000
      [L/S/n=  245./ .095/.035]
      {Vmax= 1.325:Dmax= 3.172}
R0100:C00187------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:N_WCa      54279.41  147.366 No_date   35:29   39.13  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:N_WCb      54279.41  147.339 No_date   35:35   39.13  n/a     .000
      [L/S/n=  245./ .095/.035]
      {Vmax= 1.325:Dmax= 3.172}
R0100:C00188------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:N_WCb      54279.41  147.339 No_date   35:35   39.13  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:N_WC       54279.41  147.314 No_date   35:41   39.13  n/a     .000
      [L/S/n=  245./ .095/.035]
      {Vmax= 1.325:Dmax= 3.171}
#****************************************************************************
# Hydrograph from Node West Clarke routed to Node at Kennedy - Burnett Drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 4534
#
R0100:C00189------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:N_WC       54279.41  147.314 No_date   35:41   39.13  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:N_KB       54279.41  146.607 No_date   35:56   39.13  n/a     .000
      [L/S/n= 1020./ .050/.035]
      {Vmax=  .987:Dmax= 3.884}
#****************************************************************************
#    Catchment KEN_BU
#    - To Kennedy-Burnett SWM Facility
#    - Outlets to Fraser-Clarke drain (north of the Jock)
#    - Medium density residential subdivision
#****************************************************************************
#****************************************************************************
#   Existing Kennedy-Burnett SWM Facility
#    - Rating curve obtained from URTKBP
#    - Tributary Drainage Area to Pond = 160 ha
#****************************************************************************
R0100:C00190------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-01A        40.82    5.490 No_date   28:09   36.71 .415     .000
      [XIMP=.10:TIMP=.40]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI= .50:LGI= 522.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00191------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-01A        40.82    5.490 No_date   28:09   36.71  n/a     .000
     Major System   /     1.0 02:KB-01A-MJ       .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-01A-MN     40.82    3.600 No_date   28:44   36.91  n/a     .000
      {MjSysSto=.1774E+04, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00192------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-01A-MJ       .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:KB-01A-MN     40.82    3.600 No_date   28:44   36.91  n/a     .000
                 SUM=     1.0 01:KB-01A-S      40.82    3.600 No_date   28:44   36.91  n/a     .000
R0100:C00193------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-01B        31.10    4.072 No_date   28:06   40.61 .458     .000
      [XIMP=.19:TIMP=.38]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .42:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI= .42:LGI= 455.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00194------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-01B        31.10    4.072 No_date   28:06   40.61  n/a     .000
     Major System   /     1.0 02:KB-01B-MJ       .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-01B-MN     31.10    1.585 No_date   27:51   40.77  n/a     .000
      {MjSysSto=.3465E+04, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00195------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-01B-MJ       .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:KB-01B-MN     31.10    1.585 No_date   27:51   40.77  n/a     .000
                 SUM=     1.0 01:KB-01B-S      31.10    1.585 No_date   27:51   40.77  n/a     .000
R0100:C00196------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-01C        13.78    2.471 No_date   28:03   41.89 .473     .000
      [XIMP=.20:TIMP=.41]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI= .50:LGI= 303.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00197------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-01C        13.78    2.471 No_date   28:03   41.89  n/a     .000
     Major System   /     1.0 02:KB-01C-MJ       .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-01C-MN     13.78    1.350 No_date   28:37   42.09  n/a     .000
      {MjSysSto=.8650E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00198------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-01C-MJ       .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:KB-01C-MN     13.78    1.350 No_date   28:37   42.09  n/a     .000
                 SUM=     1.0 01:KB-01C-S      13.78    1.350 No_date   28:37   42.09  n/a     .000
R0100:C00199------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-03         84.78   12.777 No_date   28:07   41.33 .467     .000
      [XIMP=.20:TIMP=.39]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI= .63:LGI= 752.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00200------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-03         84.78   12.777 No_date   28:07   41.33  n/a     .000
     Major System   /     1.0 02:KB-03-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-03-MN      84.78    5.270 No_date   29:11   41.33  n/a     .000
      {MjSysSto=.8591E+04, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00201------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-03-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:KB-03-MN      84.78    5.270 No_date   29:11   41.33  n/a     .000
                 SUM=     1.0 01:KB-03-S       84.78    5.270 No_date   29:11   41.33  n/a     .000
R0100:C00202------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-04          6.95    1.754 No_date   28:00   78.30 .884     .000
      [XIMP=.85:TIMP=.85]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .94:SLPI= .50:LGI= 215.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00203------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-04          6.95    1.754 No_date   28:00   78.30  n/a     .000
     Major System   /     1.0 02:KB-04-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-04-MN       6.95     .503 No_date   27:43   78.64  n/a     .000
      {MjSysSto=.1121E+04, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00204------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-04-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:KB-04-MN       6.95     .503 No_date   27:43   78.64  n/a     .000
                 SUM=     1.0 01:KB-04-S        6.95     .503 No_date   27:43   78.64  n/a     .000
R0100:C00205------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-05          5.19    1.406 No_date   28:00   82.69 .934     .000
      [XIMP=.93:TIMP=.93]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 186.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00206------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-06         12.93    3.585 No_date   28:00   79.73 .900     .000
      [XIMP=.87:TIMP=.87]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .94:SLPI=4.75:LGI= 294.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00207------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-06         12.93    3.585 No_date   28:00   79.73  n/a     .000
     Major System   /     1.0 02:KB-06-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-06-MN      12.93    2.262 No_date   27:51   79.89  n/a     .000
      {MjSysSto=.6247E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00208------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-06-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:KB-06-MN      12.93    2.262 No_date   27:51   79.89  n/a     .000
                 SUM=     1.0 01:KB-06-S       12.93    2.262 No_date   27:51   79.89  n/a     .000
R0100:C00209------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-11          4.03    1.012 No_date   28:00   67.54 .763     .000
      [XIMP=.68:TIMP=.68]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI=2.00:LGI= 164.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00210------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-11          4.03    1.012 No_date   28:00   67.54  n/a     .000
     Major System   /     1.0 02:KB-11-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-11-MN       4.03     .577 No_date   27:51   67.60  n/a     .000
      {MjSysSto=.2184E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00211------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-11-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:KB-11-MN       4.03     .577 No_date   27:51   67.60  n/a     .000
                 SUM=     1.0 01:KB-11-S        4.03     .577 No_date   27:51   67.60  n/a     .000
R0100:C00212------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S1             4.99    1.426 No_date   28:00   82.69 .934     .000
      [XIMP=.93:TIMP=.93]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=2.00:LGI= 182.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00213------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-15          2.15     .548 No_date   28:00   75.20 .849     .000
      [XIMP=.79:TIMP=.79]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .16:SLPI= .30:LGI= 120.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00214------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-01A-S      40.82    3.600 No_date   28:44   36.91  n/a     .000
                    +     1.0 02:KB-01B-S      31.10    1.585 No_date   27:51   40.77  n/a     .000
                    +     1.0 02:KB-01C-S      13.78    1.350 No_date   28:37   42.09  n/a     .000
                    +     1.0 02:KB-03-S       84.78    5.270 No_date   29:11   41.33  n/a     .000
                    +     1.0 02:KB-04-S        6.95     .503 No_date   27:43   78.64  n/a     .000
                    +     1.0 02:KB-05          5.19    1.406 No_date   28:00   82.69  n/a     .000
                    +     1.0 02:KB-06-S       12.93    2.262 No_date   27:51   79.89  n/a     .000
                    +     1.0 02:KB-11-S        4.03     .577 No_date   27:51   67.60  n/a     .000
                    +     1.0 02:KB-15          2.15     .548 No_date   28:00   75.20  n/a     .000
                    +     1.0 02:S1             4.99    1.426 No_date   28:00   82.69  n/a     .000
                 SUM=     1.0 01:KB-P1        206.72   18.527 No_date   28:00   46.99  n/a     .000
R0100:C00215------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:KB-P1        206.72   18.527 No_date   28:00   46.99  n/a     .000
                out <=    1.0 01:KB-P1R       196.58   12.438 No_date   28:00   46.99  n/a     .000
           overflow <=    1.0 03:KB-P1ovf      10.14    6.062 No_date   28:00   46.99  n/a     .000
     {MxStoUsed=.7330E+00  m3, TotOvfVol=.4763E+00  m3, N-Ovf=    2, TotDurOvf=    1.hrs}
R0100:C00216------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-P1R       196.58   12.438 No_date   28:00   46.99  n/a     .000
                    +     1.0 02:KB-P1ovf      10.14    6.062 No_date   28:00   46.99  n/a     .000
                 SUM=     1.0 01:KB-Pond1     206.72   18.500 No_date   28:00   46.99  n/a     .000
R0100:C00217------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:KB-Pond1     206.72   18.500 No_date   28:00   46.99  n/a     .000
      fname :KB-Pond1.0100
      remark:Total Flows at KB first pond
R0100:C00218------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-07         10.86    2.908 No_date   28:00   79.06 .893     .000
      [XIMP=.86:TIMP=.86]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI=2.00:LGI= 269.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00219------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-07         10.86    2.908 No_date   28:00   79.06  n/a     .000
     Major System   /     1.0 02:KB-07-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-07-MN      10.86    2.094 No_date   27:53   79.26  n/a     .000
      {MjSysSto=.3334E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00220------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-07-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:KB-07-MN      10.86    2.094 No_date   27:53   79.26  n/a     .000
                 SUM=     1.0 01:KB-07-S       10.86    2.094 No_date   27:53   79.26  n/a     .000
R0100:C00221------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-08          6.61    1.609 No_date   28:00   65.36 .738     .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI=2.00:LGI= 210.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00222------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-08          6.61    1.609 No_date   28:00   65.36  n/a     .000
     Major System   /     1.0 02:KB-08-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-08-MN       6.61    1.058 No_date   27:52   65.50  n/a     .000
      {MjSysSto=.2397E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00223------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-08-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:KB-08-MN       6.61    1.058 No_date   27:52   65.50  n/a     .000
                 SUM=     1.0 01:KB-08-S        6.61    1.058 No_date   27:52   65.50  n/a     .000
R0100:C00224------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-09          2.60     .727 No_date   28:00   78.38 .885     .000
      [XIMP=.86:TIMP=.86]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=2.00:LGI= 132.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00225------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-10_1        2.37     .663 No_date   28:00   78.39 .885     .000
      [XIMP=.86:TIMP=.86]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=2.00:LGI= 126.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00226------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-10_2        1.14     .322 No_date   28:00   78.39 .885     .000
      [XIMP=.86:TIMP=.86]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=2.00:LGI=  87.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00227------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-12          4.86    1.294 No_date   28:00   74.45 .841     .000
      [XIMP=.79:TIMP=.79]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.10:SLPI=2.00:LGI= 180.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00228------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-12          4.86    1.294 No_date   28:00   74.45  n/a     .000
     Major System   /     1.0 02:KB-12-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-12-MN       4.86     .867 No_date   28:11   74.79  n/a     .000
      {MjSysSto=.1873E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00229------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-12-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:KB-12-MN       4.86     .867 No_date   28:11   74.79  n/a     .000
                 SUM=     1.0 01:KB-12-S        4.86     .867 No_date   28:11   74.79  n/a     .000
R0100:C00230------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-13         10.19    2.407 No_date   28:00   65.36 .738     .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI=2.00:LGI= 261.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00231------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-13         10.19    2.407 No_date   28:00   65.36  n/a     .000
     Major System   /     1.0 02:KB-13-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-13-MN      10.19    1.722 No_date   27:54   65.63  n/a     .000
      {MjSysSto=.2806E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00232------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-13-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:KB-13-MN      10.19    1.722 No_date   27:54   65.63  n/a     .000
                 SUM=     1.0 01:KB-13-S       10.19    1.722 No_date   27:54   65.63  n/a     .000
R0100:C00233------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-14          5.47    1.338 No_date   28:00   65.36 .738     .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI=2.00:LGI= 191.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00234------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-14          5.47    1.338 No_date   28:00   65.36  n/a     .000
     Major System   /     1.0 02:KB-14-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-14-MN       5.47     .873 No_date   27:52   65.48  n/a     .000
      {MjSysSto=.2041E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00235------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-14-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:KB-14-MN       5.47     .873 No_date   27:52   65.48  n/a     .000
                 SUM=     1.0 01:KB-14-S        5.47     .873 No_date   27:52   65.48  n/a     .000
R0100:C00236------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-16_2        3.42     .803 No_date   28:01   70.16 .792     .000
      [XIMP=.71:TIMP=.71]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .16:SLPI= .30:LGI= 151.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00237------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-Pond1     206.72   18.500 No_date   28:00   46.99  n/a     .000
                    +     1.0 02:KB-07-S       10.86    2.094 No_date   27:53   79.26  n/a     .000
                    +     1.0 02:KB-08-S        6.61    1.058 No_date   27:52   65.50  n/a     .000
                    +     1.0 02:KB-09          2.60     .727 No_date   28:00   78.38  n/a     .000
                    +     1.0 02:KB-10_1        2.37     .663 No_date   28:00   78.38  n/a     .000
                    +     1.0 02:KB-10_2        1.14     .322 No_date   28:00   78.39  n/a     .000
                    +     1.0 02:KB-12-S        4.86     .867 No_date   28:11   74.79  n/a     .000
                    +     1.0 02:KB-13-S       10.19    1.722 No_date   27:54   65.63  n/a     .000
                    +     1.0 02:KB-14-S        5.47     .873 No_date   27:52   65.48  n/a     .000
                    +     1.0 02:KB-16_2        3.42     .803 No_date   28:01   70.16  n/a     .000
                 SUM=     1.0 01:KB-P2        254.24   27.626 No_date   28:00   51.59  n/a     .000
R0100:C00238------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:KB-P2        254.24   27.626 No_date   28:00   51.59  n/a     .000
                out <=    1.0 01:KB-P2R       249.74   17.634 No_date   28:06   51.59  n/a     .000
           overflow <=    1.0 03:KB-P2ovf       4.50    6.910 No_date   28:06   51.59  n/a     .000
     {MxStoUsed=.1110E+01  m3, TotOvfVol=.2320E+00  m3, N-Ovf=    2, TotDurOvf=    0.hrs}
R0100:C00239------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-P2R       249.74   17.634 No_date   28:06   51.59  n/a     .000
                    +     1.0 02:KB-P2ovf       4.50    6.910 No_date   28:06   51.59  n/a     .000
                 SUM=     1.0 01:KB-Pond2     254.24   24.544 No_date   28:06   51.59  n/a     .000
R0100:C00240------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:KB-Pond2     254.24   24.544 No_date   28:06   51.59  n/a     .000
      fname :KB-Pond2.0100
```

```
       remark:Total Flows at KB second pond
R0100:C00241------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-16_1        2.80     .686 No_date   28:00   72.68 .821     .000
      [XIMP=.75:TIMP=.75]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .16:SLPI= .30:LGI= 137.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00242------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:KB-Pond2     254.24   24.544 No_date   28:06   51.59  n/a     .000
                     +     1.0 02:KB-16_1        2.80     .686 No_date   28:00   72.68  n/a     .000
                  SUM=     1.0 01:KB-P3        257.04   24.930 No_date   28:06   51.82  n/a     .000
R0100:C00243------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->     1.0 02:KB-P3        257.04   24.930 No_date   28:06   51.82  n/a     .000
                 out <=    1.0 01:KB-P3R         8.56     .051 No_date   17:08   51.81  n/a     .000
            overflow <=    1.0 03:KB-P3ovf     248.48   24.659 No_date   28:07   51.82  n/a     .000
     {MxStoUsed=.1991E-02  m3, TotOvfVol=.1288E+02  m3, N-Ovf=    1, TotDurOvf=   23.hrs}
R0100:C00244------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:KB-P3R         8.56     .051 No_date   17:08   51.81  n/a     .000
                     +     1.0 02:KB-P3ovf     248.48   24.659 No_date   28:07   51.82  n/a     .000
                  SUM=     1.0 01:KB-Pond3     257.04   24.710 No_date   28:07   51.82  n/a     .000
R0100:C00245------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD               1.0 01:KB-Pond3     257.04   24.710 No_date   28:07   51.82  n/a     .000
      fname :KB-Pond3.0100
      remark:Total Flows at KB third pond
#***************************************************************************
#    EXISTING / PROPOSED Subcatchments (Kennedy-Burnett SWM Facility (118080), SWM Modeling Approach, NOVATECH Report Ju
#    - TO FRASER-CLARKE DRAIN
#***************************************************************************
R0100:C00246------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:FC-01          8.03    1.646 No_date   28:01   54.40 .614     .000
      [XIMP=.47:TIMP=.47]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 231.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00247------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD        1.0 01:FC-01          8.03    1.646 No_date   28:01   54.40  n/a     .000
     Major System   /      1.0 02:FC-01-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \      1.0 03:FC-01-MN       8.03     .756 No_date   27:49   54.46  n/a     .000
      {MjSysSto=.6274E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00248------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:FC-01-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                     +     1.0 02:FC-01-MN       8.03     .756 No_date   27:49   54.46  n/a     .000
                  SUM=     1.0 01:FC-01-S        8.03     .756 No_date   27:49   54.46  n/a     .000
R0100:C00249------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:FC-02         16.05    4.197 No_date   28:00   82.69 .934     .000
      [XIMP=.93:TIMP=.93]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 327.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00250------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD        1.0 01:FC-02         16.05    4.197 No_date   28:00   82.69  n/a     .000
     Major System   /      1.0 02:FC-02-MJ        .45    1.768 No_date   28:05   82.69  n/a     .000
     Minor System   \      1.0 03:FC-02-MN      15.60    1.159 No_date   27:43   82.88  n/a     .000
      {MjSysSto=.2385E+04, TotOvfVol=.3716E+03, N-Ovf=    1, TotDurOvf=    0.hrs}
R0100:C00251------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:FC-02-MJ        .45    1.768 No_date   28:05   82.69  n/a     .000
                     +     1.0 02:FC-02-MN      15.60    1.159 No_date   27:43   82.88  n/a     .000
                  SUM=     1.0 01:FC-02-S       16.05    2.927 No_date   28:05   82.87  n/a     .000
R0100:C00252------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:FC-03          7.37    1.717 No_date   28:00   64.86 .732     .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 222.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00253------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD        1.0 01:FC-03          7.37    1.717 No_date   28:00   64.86  n/a     .000
     Major System   /      1.0 02:FC-03-MJ        .34     .661 No_date   28:06   64.86  n/a     .000
     Minor System   \      1.0 03:FC-03-MN       7.03     .358 No_date   27:41   64.90  n/a     .000
      {MjSysSto=.1131E+04, TotOvfVol=.2188E+03, N-Ovf=    1, TotDurOvf=    0.hrs}
R0100:C00254------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:FC-03-MJ        .34     .661 No_date   28:06   64.86  n/a     .000
                     +     1.0 02:FC-03-MN       7.03     .358 No_date   27:41   64.90  n/a     .000
                  SUM=     1.0 01:FC-03-S        7.37    1.019 No_date   28:06   64.90  n/a     .000
R0100:C00255------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:FC-04         12.87    2.884 No_date   28:01   64.86 .732     .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 293.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00256------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD        1.0 01:FC-04         12.87    2.884 No_date   28:01   64.86  n/a     .000
     Major System   /      1.0 02:FC-04-MJ        .44     .978 No_date   28:07   64.86  n/a     .000
     Minor System   \      1.0 03:FC-04-MN      12.43     .741 No_date   27:43   65.10  n/a     .000
      {MjSysSto=.1794E+04, TotOvfVol=.2828E+03, N-Ovf=    1, TotDurOvf=    0.hrs}
R0100:C00257------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:FC-04-MJ        .44     .978 No_date   28:07   64.86  n/a     .000
                     +     1.0 02:FC-04-MN      12.43     .741 No_date   27:43   65.10  n/a     .000
                  SUM=     1.0 01:FC-04-S       12.87    1.719 No_date   28:07   65.09  n/a     .000
#***************************************************************************
#    PROPOSED Subcatchments (Kennedy-Burnett SWM Facility (118080), SWM Modeling Approach, NOVATECH Report June, 2020)
#    - TO JOCK RIVER
#***************************************************************************
R0100:C00258------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:JR-01          8.24    1.891 No_date   28:00   64.86 .732     .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 234.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00259------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD        1.0 01:JR-01          8.24    1.891 No_date   28:00   64.86  n/a     .000
     Major System   /      1.0 02:JR-01-MJ        .20     .471 No_date   28:06   64.86  n/a     .000
     Minor System   \      1.0 03:JR-01-MN       8.04     .563 No_date   27:44   64.95  n/a     .000
      {MjSysSto=.1040E+04, TotOvfVol=.1267E+03, N-Ovf=    1, TotDurOvf=    0.hrs}
R0100:C00260------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:JR-01-MJ        .20     .471 No_date   28:06   64.86  n/a     .000
                     +     1.0 02:JR-01-MN       8.04     .563 No_date   27:44   64.95  n/a     .000
                  SUM=     1.0 01:JR-01-S        8.24    1.034 No_date   28:06   64.95  n/a     .000
R0100:C00261------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:JR-02          1.59     .393 No_date   28:00   64.86 .732     .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 103.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00262------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD        1.0 01:JR-02          1.59     .393 No_date   28:00   64.85  n/a     .000
     Major System   /      1.0 02:JR-02-MJ        .02     .087 No_date   28:03   64.85  n/a     .000
     Minor System   \      1.0 03:JR-02-MN       1.57     .153 No_date   27:44   65.24  n/a     .000
      {MjSysSto=.1530E+03, TotOvfVol=.1375E+02, N-Ovf=    1, TotDurOvf=    0.hrs}
R0100:C00263------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:JR-02-MJ        .02     .087 No_date   28:03   64.85  n/a     .000
                     +     1.0 02:JR-02-MN       1.57     .153 No_date   27:44   65.24  n/a     .000
                  SUM=     1.0 01:JR-02-S        1.59     .240 No_date   28:03   65.23  n/a     .000
#***************************************************************************
#    Catchment FRASER
#    - To Fraser-Clarke drain (north of the Jock)
#    - Developed land with assumed 43% imp.
#    - 2020-12-17 Change Fraser area to be 35.1 as measured from QGIS
#    - 2020-12-17 All Fraser is undeveloped (Nashyd)
#***************************************************************************
R0100:C00264------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:FRASER-DRN    13.65     .837 No_date   28:21   45.95 .519     .000
      [CN= 77.0: N= 3.00: Tp=  .43]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0100:C00265------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:FRASER-D      21.61     .959 No_date   28:40   45.95 .519     .000
      [CN= 77.0: N= 3.00: Tp=  .67]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0100:C00266------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:KB-Pond3     257.04   24.710 No_date   28:07   51.82  n/a     .000
                     +     1.0 02:S-1-B         55.36    3.260 No_date   28:23   45.95  n/a     .000
                     +     1.0 02:FRASER-DRN    13.65     .837 No_date   28:21   45.95  n/a     .000
                     +     1.0 02:FRASER-D      21.61     .959 No_date   28:40   45.95  n/a     .000
                     +     1.0 02:N_KB       54279.41  146.607 No_date   35:56   39.13  n/a     .000
                     +     1.0 02:FC-01-S        8.03     .756 No_date   27:49   54.46  n/a     .000
                     +     1.0 02:FC-02-S       16.05    2.927 No_date   28:05   82.87  n/a     .000
                     +     1.0 02:FC-03-S        7.37    1.019 No_date   28:06   64.90  n/a     .000
                  SUM=     1.0 01:4241       54658.52  147.494 No_date   35:56   39.22  n/a     .000
R0100:C00267------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD               1.0 01:4241       54658.52  147.494 No_date   35:56   39.22  n/a     .000
      fname :4241.0100
      remark:Total Flows at Ken-Burnett Outlet
# Hydrograph from Node Ken-Burnett to station 3633
# Channel X-Section obtained from RVCA Hydraulic Model - Station 4241
#
R0100:C00268------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->     1.0 02:4241       54658.52  147.494 No_date   35:56   39.22  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:4241-out   54658.52  147.461 No_date   35:49   39.22  n/a     .000
      [L/S/n=  294./ .109/.035]
      {Vmax= 1.403:Dmax= 2.621}
R0100:C00269------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:4241-out   54658.52  147.461 No_date   35:49   39.22  n/a     .000
                     +     1.0 02:FC-04-S       12.87    1.719 No_date   28:07   65.09  n/a     .000
                     +     1.0 02:JR-01-S        8.24    1.034 No_date   28:06   64.95  n/a     .000
                     +     1.0 02:JR-02-S        1.59     .240 No_date   28:03   65.23  n/a     .000
                  SUM=     1.0 01:SN_KB      54681.21  147.525 No_date   35:49   39.23  n/a     .000
R0100:C00270------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD               1.0 01:SN_KB      54681.21  147.525 No_date   35:49   39.23  n/a     .000
      fname :SN_KB.0100
      remark:HYD_COMMENT=["Total Flows before Station 3633]
# Hydrograph from Station 3633 to Node Todd
# Channel X-Section obtained from RVCA Hydraulic Model - Station 3633
# JFSA 2021-02-26 change the channel length (at station 3633) from 650m to 608m and change the slope from 0.0498% to 0.2
#
R0100:C00271------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->     1.0 02:SN_KB      54681.21  147.525 No_date   35:49   39.23  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N_TO       54681.21  147.299 No_date   35:49   39.23  n/a     .000
      [L/S/n=  608./ .247/.035]
      {Vmax= 1.918:Dmax= 1.962}
#***************************************************************************
#    Catchment Greenbank
#    - To Greenbank Drain (south of the Jock)
#    - JFSA 2021-01-18 add Greenbank pond as per JFSA, P598(06)-15, June 2016
#    - JFSA 2021-01-19 update area from 37.479 ha to 36.6 ha based on GIS measurements
#***************************************************************************
R0100:C00272------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:Greenbank     36.60    7.069 No_date   28:01   71.80 .811     .000
      [XIMP=.64:TIMP=.68]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 494.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0100:C00273------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->     1.0 02:Greenbank     36.60    7.069 No_date   28:01   71.80  n/a     .000
                 out <=    1.0 01:GreenB_MN     36.60    5.350 No_date   28:07   71.80  n/a     .000
            overflow <=    1.0 03:GreenB_MJ       .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.9351E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00274------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:N_TO       54681.21  147.299 No_date   35:49   39.23  n/a     .000
                     +     1.0 02:GreenB_MJ       .00     .000 No_date    0:00     .00  n/a     .000
                     +     1.0 02:GreenB_MN     36.60    5.350 No_date   28:07   71.80  n/a     .000
                  SUM=     1.0 01:GreenB     54717.82  147.488 No_date   35:49   39.25  n/a     .000
R0100:C00275------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD               1.0 01:GreenB     54717.82  147.488 No_date   35:49   39.25  n/a     .000
      fname :GreenB.0100
      remark:Total Flows at Greenbank Drain
#***************************************************************************
#    Catchment TODD
#    - To Todd Drain (south of the Jock)
#    - Subdivision with 43% imp. as per Barrhaven South MSS
#    - 2020-11-30 increase imp. based on P598(04)-11
#    - 2020-11-30 update TODD Tributary Drainage Area to  = 146.015 ha based on P598(04)-11
#    - 2020-11-30 split TODD Drainage Area to MAJOR, MINOR, POND and ALL
#***************************************************************************
#    - JFSA 2021-01-19 add "TODD_MN1" as part of Clarke("W_CLAR_MJ") and remove it from Todd
R0100:C00276------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:TODD_MN2       2.10     .428 No_date   28:00   66.78 .754     .000
      [XIMP=.53:TIMP=.57]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 118.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0100:C00277------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:TODD_MN3        .12     .025 No_date   28:00   66.78 .754     .000
      [XIMP=.53:TIMP=.57]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI=  28.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0100:C00278------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:TODD_MJ       30.23    5.210 No_date   28:02   68.65 .775     .000
      [XIMP=.52:TIMP=.64]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 449.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0100:C00279------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:TODD_ALL     112.91   17.286 No_date   28:04   66.60 .752     .000
      [XIMP=.52:TIMP=.57]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 868.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0100:C00280------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:TODD_P         3.06     .669 No_date   28:00   70.28 .794     .000
      [XIMP=.63:TIMP=.63]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 143.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
# 5-Year + 12% Capture
R0100:C00281------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->     1.0 02:TODD_MJ       30.23    5.210 No_date   28:02   68.65  n/a     .000
                 out <=    1.0 01:TODD_MJn      28.64    3.314 No_date   27:54   68.65  n/a     .000
            overflow <=    1.0 03:TODD_MJj       1.59    1.889 No_date   28:02   68.65  n/a     .000
     {MxStoUsed=.1512E-03  m3, TotOvfVol=.1094E+00  m3, N-Ovf=    1, TotDurOvf=    0.hrs}
# 5-Year + 12% Capture
R0100:C00282------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->     1.0 02:TODD_MN2       2.10     .428 No_date   28:00   66.78  n/a     .000
                 out <=    1.0 01:TODD_MN2n      1.99     .268 No_date   27:52   66.78  n/a     .000
            overflow <=    1.0 03:TODD_MN2j       .11     .155 No_date   28:00   66.78  n/a     .000
     {MxStoUsed=.1204E-03  m3, TotOvfVol=.7282E-02  m3, N-Ovf=    1, TotDurOvf=    0.hrs}
R0100:C00283------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->     1.0 02:TODD_MN3        .12     .025 No_date   28:00   66.78  n/a     .000
                 out <=    1.0 01:TODD_MN3n       .11     .016 No_date   27:52   66.78  n/a     .000
            overflow <=    1.0 03:TODD_MN3j       .01     .009 No_date   28:00   66.78  n/a     .000
     {MxStoUsed=.9808E-04  m3, TotOvfVol=.3933E-03  m3, N-Ovf=    1, TotDurOvf=    0.hrs}
R0100:C00284------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A2            25.50    3.884 No_date   28:03   62.46 .705     .000
      [XIMP=.42:TIMP=.52]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 566.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0100:C00285------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD        1.0 01:A2            25.50    3.884 No_date   28:03   62.46  n/a     .000
     Major System   /      1.0 02:A2-MJ          1.43    2.026 No_date   28:04   62.46  n/a     .000
     Minor System   \      1.0 03:A2-MN         24.07    1.818 No_date   27:50   62.71  n/a     .000
      {MjSysSto=.9240E+03, TotOvfVol=.8908E+03, N-Ovf=    1, TotDurOvf=    0.hrs}
R0100:C00286------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:TODD_MN2n      1.99     .268 No_date   27:52   66.78  n/a     .000
                     +     1.0 02:TODD_MN3n       .11     .016 No_date   27:52   66.78  n/a     .000
                     +     1.0 02:TODD_MJj       1.59    1.889 No_date   28:02   68.65  n/a     .000
                     +     1.0 02:TODD_P         3.06     .669 No_date   28:00   70.28  n/a     .000
                     +     1.0 02:TODD_ALL     112.91   17.286 No_date   28:04   66.60  n/a     .000
                     +     1.0 02:W_CLAR_MJn     1.69     .213 No_date   27:52   66.22  n/a     .000
                  SUM=     1.0 01:TODD         121.35   20.000 No_date   28:03   66.72  n/a     .000
R0100:C00287------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD               1.0 01:TODD         121.35   20.000 No_date   28:03   66.72  n/a     .000
      fname :TODD.0100
      remark:Total Flows at Todd Drain
#***************************************************************************
#    Todd Pond 3
#    - Rating curve obtained from Barrhaven South MSS modeling
#    - stantec 2007, Tributary Drainage Area to MSS Pond 3 = 193 ha
#***************************************************************************
R0100:C00288------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->     1.0 02:TODD         121.35   20.000 No_date   28:03   66.72  n/a     .000
                 out <=    1.0 01:MS_P3        121.35   15.844 No_date   28:09   66.71  n/a     .000
            overflow <=    1.0 03:P3-OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.2834E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00289------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:GreenB     54717.82  147.488 No_date   35:49   39.25  n/a     .000
                     +     1.0 02:MS_P3        121.35   15.844 No_date   28:09   66.71  n/a     .000
                     +     1.0 02:P3-OVF          .00     .000 No_date    0:00     .00  n/a     .000
                     +     1.0 02:TODD_MN2j       .11     .155 No_date   28:00   66.78  n/a     .000
                     +     1.0 02:A2-MJ          1.43    2.026 No_date   28:04   62.46  n/a     .000
                  SUM=     1.0 01:SN_TO      54840.70  147.973 No_date   35:49   39.31  n/a     .000
R0100:C00290------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD               1.0 01:SN_TO      54840.70  147.973 No_date   35:49   39.31  n/a     .000
      fname :SN_TO.0100
      remark:Total Flows at Todd Drain
#
# Hydrograph from Todd Drain routed to Corrigan Drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 2462
# 2021-02-19 Change the slope from 0.033 % (as per Stantec Report 2007) to 0.05 % so the model will be more stable and g
R0100:C00291------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->     1.0 02:SN_TO      54840.70  147.973 No_date   35:49   39.31  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:N_TO       54840.70  147.653 No_date   36:19   39.31  n/a     .000
      [L/S/n=  280./ .050/.045]
      {Vmax=  .880:Dmax= 3.715}
R0100:C00292------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD               1.0 01:N_TO       54840.70  147.653 No_date   36:19   39.31  n/a     .000
      fname :N_TO.0100
      remark:Total inflows at Station 2462
#***************************************************************************
#    Catchment CORRIG
#    - To Corrigan Drain (south of the Jock)
#    - Primarily Developed (medium density)
#    - JFSA JAN 2021, add Corrigan subcatchments as per IBI, July 2008
#***************************************************************************
R0100:C00293------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:corr1         15.87    3.185 No_date   28:01   70.28 .794     .000
      [XIMP=.63:TIMP=.63]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 325.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0100:C00294------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD        1.0 01:corr1         15.87    3.185 No_date   28:01   70.28  n/a     .000
     Major System   /      1.0 02:corr1-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \      1.0 03:corr1-MN      15.87    1.818 No_date   28:25   70.70  n/a     .000
      {MjSysSto=.7879E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00295------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:corr2         12.47     .388 No_date   29:10   45.95 .519     .000
      [CN= 77.0: N= 3.00: Tp= 1.10]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0100:C00296------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A1-Corrig     15.75    2.624 No_date   28:01   62.46 .705     .000
      [XIMP=.42:TIMP=.52]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 324.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0100:C00297------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD        1.0 01:A1-Corrig     15.75    2.624 No_date   28:01   62.46  n/a     .000
```

```
      Major System   /     1.0 02:A1-MJ           .00     .000 No_date    0:00     .00  n/a     .000
      Minor System   \     1.0 03:A1-MN         15.75    1.818 No_date   27:55   62.48  n/a     .000
       {MjSysSto=.3859E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00298------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD      1.0 01:B1             2.77     .143 No_date   28:09   29.03 .328     .000
       [CN= 56.0: N= 3.00: Tp=  .23]
       [IaREC= 4.00: SMIN= 79.69: SMAX=531.24: SK= .010]
       [InterEventTime=  12.00]
R0100:C00299------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD    1.0 01:A4             1.27     .266 No_date   28:00   70.58 .797     .000
       [XIMP=.65:TIMP=.65]
       [LOSS= 2 :CN= 75.0]
       [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 253.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 33.81: SMAX=225.43: SK= .010]
R0100:C00300------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD        1.0 01:A4             1.27     .266 No_date   28:00   70.58  n/a     .000
     Major System   /      1.0 02:A4-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \      1.0 03:A4-MN          1.27     .266 No_date   28:00   70.58  n/a     .000
       {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00301------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:A1-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                      +    1.0 02:A1-MN         15.75    1.818 No_date   27:55   62.48  n/a     .000
                      +    1.0 02:corr1-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                      +    1.0 02:corr1-MN      15.87    1.818 No_date   28:25   70.70  n/a     .000
                      +    1.0 02:corr2         12.47     .388 No_date   29:10   45.95  n/a     .000
                      +    1.0 02:B1             2.77     .143 No_date   28:09   29.03  n/a     .000
                      +    1.0 02:A4-MN          1.27     .266 No_date   28:00   70.58  n/a     .000
                  SUM=     1.0 01:MH101         48.13    4.085 No_date   28:02   59.20  n/a     .000
R0100:C00302------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD               1.0 01:MH101         48.13    4.085 No_date   28:02   59.20  n/a     .000
       fname :MH101.0100
       remark:Total Flows at MH101
R0100:C00303------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->     1.0 02:MH101         48.13    4.085 No_date   28:02   59.20  n/a     .000
 *    [RDT= 1.00] out<-    1.0 01:101-102       48.13    4.065 No_date   28:03   59.20  n/a     .000
       [L/S/n=  368./ .540/.013]
       {Vmax= 3.154:Dmax= 1.125}
       [Din= 1.05:Dused= 1.37}
R0100:C00304------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:A2-MN         24.07    1.818 No_date   27:50   62.71  n/a     .000
                      +    1.0 02:101-102       48.13    4.065 No_date   28:03   59.20  n/a     .000
                  SUM=     1.0 01:MH102         72.20    5.883 No_date   28:03   60.37  n/a     .000
R0100:C00305------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD               1.0 01:MH102         72.20    5.883 No_date   28:03   60.37  n/a     .000
       fname :MH102.0100
       remark:Total Flows at MH102
R0100:C00306------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD    1.0 01:A5             1.60     .346 No_date   28:01   73.40 .829     .000
       [XIMP=.71:TIMP=.71]
       [LOSS= 2 :CN= 75.0]
       [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 300.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 33.81: SMAX=225.43: SK= .010]
R0100:C00307------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:A4-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                      +    1.0 02:A5             1.60     .346 No_date   28:01   73.40  n/a     .000
                  SUM=     1.0 01:A5T            1.60     .346 No_date   28:01   73.40  n/a     .000
R0100:C00308------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD        1.0 01:A5T            1.60     .346 No_date   28:01   73.40  n/a     .000
     Major System   /      1.0 02:A5-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \      1.0 03:A5-MN          1.60     .346 No_date   28:01   73.40  n/a     .000
       {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00309------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->     1.0 02:MH102         72.20    5.883 No_date   28:03   60.37  n/a     .000
 *    [RDT= 1.00] out<-    1.0 01:102-103       72.20    5.831 No_date   28:12   60.37  n/a     .000
       [L/S/n=  504./ .280/.013]
       {Vmax= 2.701:Dmax= 1.459}
       [Din= 1.50:Dused= 1.78}
R0100:C00310------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:102-103       72.20    5.831 No_date   28:12   60.37  n/a     .000
                      +    1.0 02:A5-MN          1.60     .346 No_date   28:01   73.40  n/a     .000
                  SUM=     1.0 01:MH103         73.80    6.079 No_date   28:04   60.65  n/a     .000
R0100:C00311------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD               1.0 01:MH103         73.80    6.079 No_date   28:04   60.65  n/a     .000
       fname :MH103.0100
       remark:Total Flows at MH103
R0100:C00312------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->     1.0 02:MH103         73.80    6.079 No_date   28:04   60.65  n/a     .000
      [RDT= 1.00] out<-    1.0 01:103-104       73.80    6.014 No_date   28:05   60.65  n/a     .000
       [L/S/n=  438./ .460/.013]
       {Vmax= 3.295:Dmax= 1.330}
       [Din= 1.65:Dused= 1.65}
R0100:C00313------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD    1.0 01:A6             1.56     .339 No_date   28:00   73.40 .829     .000
       [XIMP=.71:TIMP=.71]
       [LOSS= 2 :CN= 75.0]
       [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 280.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 33.81: SMAX=225.43: SK= .010]
R0100:C00314------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:A5-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                      +    1.0 02:A6             1.56     .339 No_date   28:00   73.40  n/a     .000
                  SUM=     1.0 01:A6T            1.56     .339 No_date   28:00   73.40  n/a     .000
R0100:C00315------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD        1.0 01:A6T            1.56     .339 No_date   28:00   73.40  n/a     .000
     Major System   /      1.0 02:A6-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \      1.0 03:A6-MN          1.56     .339 No_date   28:00   73.40  n/a     .000
       {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00316------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:A6-MN          1.56     .339 No_date   28:00   73.40  n/a     .000
                      +    1.0 02:103-104       73.80    6.014 No_date   28:05   60.65  n/a     .000
                      +    1.0 02:TODD_MJn      28.64    3.314 No_date   27:54   68.65  n/a     .000
                  SUM=     1.0 01:MH104        104.00    9.601 No_date   28:03   63.04  n/a     .000
R0100:C00317------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD               1.0 01:MH104        104.00    9.601 No_date   28:03   63.04  n/a     .000
       fname :MH104.0100
       remark:Total Flows at MH104
R0100:C00318------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD    1.0 01:B2            12.31    2.012 No_date   28:02   62.88 .710     .000
       [XIMP=.41:TIMP=.54]
       [LOSS= 2 :CN= 75.0]
       [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 417.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 33.81: SMAX=225.43: SK= .010]
R0100:C00319------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD        1.0 01:B2            12.31    2.012 No_date   28:02   62.88  n/a     .000
     Major System   /      1.0 02:B2-MJ           .36     .820 No_date   28:05   62.88  n/a     .000
     Minor System   \      1.0 03:B2-MN         11.95    1.029 No_date   27:51   62.91  n/a     .000
       {MjSysSto=.5080E+03, TotOvfVol=.2245E+03, N-Ovf=    1, TotDurOvf=    0.hrs}
R0100:C00320------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->     1.0 02:B2-MN         11.95    1.029 No_date   27:51   62.91  n/a     .000
 *    [RDT= 1.00] out<-    1.0 01:315-333       11.95    1.029 No_date   28:35   62.91  n/a     .000
       [L/S/n=  254./ .100/.013]
       {Vmax= 1.220:Dmax=  .838}
       [Din= 1.20:Dused= 1.20}
R0100:C00321------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD    1.0 01:B3             5.59     .930 No_date   28:01   62.88 .710     .000
       [XIMP=.41:TIMP=.54]
       [LOSS= 2 :CN= 75.0]
       [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 345.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 33.81: SMAX=225.43: SK= .010]
R0100:C00322------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD        1.0 01:B3             5.59     .930 No_date   28:01   62.88  n/a     .000
     Major System   /      1.0 02:B3-MJ           .19     .402 No_date   28:04   62.88  n/a     .000
     Minor System   \      1.0 03:B3-MN          5.40     .459 No_date   27:50   63.05  n/a     .000
       {MjSysSto=.2270E+03, TotOvfVol=.1217E+03, N-Ovf=    1, TotDurOvf=    0.hrs}
R0100:C00323------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:B3-MN          5.40     .459 No_date   27:50   63.05  n/a     .000
                      +    1.0 02:315-333       11.95    1.029 No_date   28:35   62.91  n/a     .000
                  SUM=     1.0 01:MH333         17.35    1.488 No_date   28:35   62.96  n/a     .000
R0100:C00324------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD               1.0 01:MH333         17.35    1.488 No_date   28:35   62.96  n/a     .000
       fname :MH333.0100
       remark:Total Flows at MH333
R0100:C00325------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->     1.0 02:MH333         17.35    1.488 No_date   28:35   62.96  n/a     .000
 *    [RDT= 1.00] out<-    1.0 01:333-335       17.35    1.489 No_date   28:27   62.96  n/a     .000
       [L/S/n=  251./ .100/.013]
       {Vmax= 1.302:Dmax= 1.057}
       [Din= 1.20:Dused= 1.29}
R0100:C00326------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->     1.0 02:333-335       17.35    1.489 No_date   28:27   62.96  n/a     .000
 *    [RDT= 1.00] out<-    1.0 01:335-338       17.35    1.481 No_date   28:35   62.96  n/a     .000
       [L/S/n=  185./ .100/.013]
       {Vmax= 1.302:Dmax= 1.057}
       [Din= 1.20:Dused= 1.29}
R0100:C00327------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->     1.0 02:335-338       17.35    1.481 No_date   28:35   62.96  n/a     .000
      [RDT= 1.00] out<-    1.0 01:338-340       17.35    1.480 No_date   28:35   62.96  n/a     .000
       [L/S/n=  233./ .100/.013]
       {Vmax= 1.330:Dmax=  .981}
       [Din= 1.35:Dused= 1.35}
R0100:C00328------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD    1.0 01:B4             7.60    1.252 No_date   28:02   62.88 .710     .000
       [XIMP=.41:TIMP=.54]
       [LOSS= 2 :CN= 75.0]
       [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 388.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 33.81: SMAX=225.43: SK= .010]
R0100:C00329------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD        1.0 01:B4             7.60    1.252 No_date   28:02   62.88  n/a     .000
     Major System   /      1.0 02:B4-MJ           .17     .411 No_date   28:06   62.88  n/a     .000
     Minor System   \      1.0 03:B4-MN          7.43     .655 No_date   27:51   62.90  n/a     .000
       {MjSysSto=.3230E+03, TotOvfVol=.1079E+03, N-Ovf=    1, TotDurOvf=    0.hrs}
R0100:C00330------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:338-340       17.35    1.480 No_date   28:35   62.96  n/a     .000
                      +    1.0 02:B4-MN          7.43     .655 No_date   27:51   62.90  n/a     .000
                  SUM=     1.0 01:MH340         24.78    2.126 No_date   28:34   62.94  n/a     .000
R0100:C00331------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD               1.0 01:MH340         24.78    2.126 No_date   28:34   62.94  n/a     .000
       fname :MH340.0100
       remark:Total Flows at MH340
R0100:C00332------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->     1.0 02:MH340         24.78    2.126 No_date   28:34   62.94  n/a     .000
      [RDT= 1.00] out<-    1.0 01:340-104       24.78    2.116 No_date   28:21   62.94  n/a     .000
       [L/S/n=  240./ .150/.013]
       {Vmax= 1.726:Dmax=  .923}
       [Din= 1.65:Dused= 1.65}
R0100:C00333------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:340-104       24.78    2.116 No_date   28:21   62.94  n/a     .000
                      +    1.0 02:MH104        104.00    9.601 No_date   28:03   63.04  n/a     .000
                  SUM=     1.0 01:MH104T       128.78   11.560 No_date   28:04   63.02  n/a     .000
R0100:C00334------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->     1.0 02:MH104T       128.78   11.560 No_date   28:04   63.02  n/a     .000
 *    [RDT= 1.00] out<-    1.0 01:104-105      128.78   11.359 No_date   28:10   63.02  n/a     .000
       [L/S/n=  380./ .100/.013]
       {Vmax= 2.115:Dmax= 2.014}
       {HGTH= 2.37:WDTH= 2.71}
R0100:C00335------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD    1.0 01:B5             2.20     .437 No_date   28:00   66.83 .755     .000
       [XIMP=.57:TIMP=.57]
       [LOSS= 2 :CN= 75.0]
       [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 187.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 33.81: SMAX=225.43: SK= .010]
R0100:C00336------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD        1.0 01:B5             2.20     .437 No_date   28:00   66.83  n/a     .000
     Major System   /      1.0 02:B5-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \      1.0 03:B5-MN          2.20     .260 No_date   27:51   66.87  n/a     .000
       {MjSysSto=.9053E+02, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00337------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD    1.0 01:A8              .96     .219 No_date   28:00   73.40 .829     .000
       [XIMP=.71:TIMP=.71]
       [LOSS= 2 :CN= 75.0]
       [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 186.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 33.81: SMAX=225.43: SK= .010]
R0100:C00338------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:A6-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                      +    1.0 02:A8              .96     .219 No_date   28:00   73.40  n/a     .000
                  SUM=     1.0 01:A8T             .96     .219 No_date   28:00   73.40  n/a     .000
R0100:C00339------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD        1.0 01:A8T             .96     .219 No_date   28:00   73.40  n/a     .000
     Major System   /      1.0 02:A8-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \      1.0 03:A8-MN           .96     .219 No_date   28:00   73.40  n/a     .000
       {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00340------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:104-105      128.78   11.359 No_date   28:10   63.02  n/a     .000
                      +    1.0 02:B5-MN          2.20     .260 No_date   27:51   66.87  n/a     .000
                      +    1.0 02:A8-MN           .96     .219 No_date   28:00   73.40  n/a     .000
                      +    1.0 02:TODD_MN3j       .01     .009 No_date   28:00   66.78  n/a     .000
                  SUM=     1.0 01:MH105        131.94   11.688 No_date   28:10   63.16  n/a     .000
R0100:C00341------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD               1.0 01:MH105        131.94   11.688 No_date   28:10   63.16  n/a     .000
       fname :MH105.0100
       remark:Total Flows at MH105
R0100:C00342------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
 *  DIVERT HYD      ->     1.0 01:A8-MJ           .00     .000 No_date    0:00     .00  n/a     .000
           diverted <=     1.0 02:A8-MJ-JR        .00     .000 No_date    0:00     .00  n/a     .000
           diverted <=     1.0 03:A8-MJ-B6        .00     .000 No_date    0:00     .00  n/a     .000
R0100:C00343------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    DIVERT HYD      ->     1.0 01:MH105        131.94   11.688 No_date   28:10   63.16  n/a     .000
           diverted <=     1.0 02:MH105-JR      36.57    8.679 No_date   28:10   63.16  n/a     .000
           diverted <=     1.0 03:MH105-B6      95.37    3.009 No_date   28:10   63.16  n/a     .000
R0100:C00344------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD    1.0 01:B7             7.19    1.283 No_date   28:01   62.88 .710     .000
       [XIMP=.41:TIMP=.54]
       [LOSS= 2 :CN= 75.0]
       [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 211.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 33.81: SMAX=225.43: SK= .010]
R0100:C00345------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:B4-MJ           .17     .411 No_date   28:06   62.88  n/a     .000
                      +    1.0 02:B7             7.19    1.283 No_date   28:01   62.88  n/a     .000
                  SUM=     1.0 01:B7-B4MJ        7.36    1.300 No_date   28:06   62.88  n/a     .000
R0100:C00346------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD        1.0 01:B7-B4MJ        7.36    1.300 No_date   28:06   62.88  n/a     .000
     Major System   /      1.0 02:B7R-MJ          .36     .671 No_date   28:06   62.88  n/a     .000
     Minor System   \      1.0 03:B7R-MN         7.00     .629 No_date   28:31   62.97  n/a     .000
       {MjSysSto=.3110E+03, TotOvfVol=.2280E+03, N-Ovf=    1, TotDurOvf=    0.hrs}
R0100:C00347------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->     1.0 02:B7R-MN         7.00     .629 No_date   28:31   62.97  n/a     .000
 *    [RDT= 1.00] out<-    1.0 01:360-106A       7.00     .629 No_date   28:31   62.97  n/a     .000
       [L/S/n=  167./ .100/.013]
       {Vmax= 1.089:Dmax=  .665}
       [Din= 1.05:Dused= 1.05}
R0100:C00348------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD    1.0 01:B6             3.29     .602 No_date   28:00   62.88 .710     .000
       [XIMP=.41:TIMP=.54]
       [LOSS= 2 :CN= 75.0]
       [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 148.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 33.81: SMAX=225.43: SK= .010]
R0100:C00349------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD        1.0 01:B6             3.29     .602 No_date   28:00   62.88  n/a     .000
     Major System   /      1.0 02:B6-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \      1.0 03:B6-MN          3.29     .064 No_date   27:33   62.92  n/a     .000
       {MjSysSto=.7353E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00350------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD    1.0 01:EX-LAND       32.50    5.231 No_date   28:02   62.70 .708     .000
       [XIMP=.50:TIMP=.50]
       [LOSS= 2 :CN= 74.0]
       [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 465.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 36.67: SMAX=244.49: SK= .010]
R0100:C00351------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD        1.0 01:EX-LAND       32.50    5.231 No_date   28:02   62.70  n/a     .000
     Major System   /      1.0 02:EX-LAND-MJ     1.77    2.874 No_date   28:03   62.70  n/a     .000
     Minor System   \      1.0 03:EX-LAND-MN    30.73    2.275 No_date   27:48   62.82  n/a     .000
       {MjSysSto=.1365E+04, TotOvfVol=.1111E+04, N-Ovf=    1, TotDurOvf=    0.hrs}
R0100:C00352------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:B7R-MJ          .36     .671 No_date   28:06   62.88  n/a     .000
                      +    1.0 02:EX-LAND-MJ     1.77    2.874 No_date   28:03   62.70  n/a     .000
                      +    1.0 02:B5-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                      +    1.0 02:B6-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                      +    1.0 02:B6-MN          3.29     .064 No_date   27:33   62.92  n/a     .000
                      +    1.0 02:A8-MJ-B6        .00     .000 No_date    0:00     .00  n/a     .000
                  SUM=     1.0 01:B6-B7ExMJ      5.42    3.483 No_date   28:03   62.85  n/a     .000
R0100:C00353------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD        1.0 01:B6-B7ExMJ      5.42    3.483 No_date   28:03   62.85  n/a     .000
     Major System   /      1.0 02:B6R-MJ          .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \      1.0 03:B6R-MN         5.42     .064 No_date   27:33   62.85  n/a     .000
       {MjSysSto=.1339E+04, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00354------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->     1.0 02:MH105-B6      95.37    3.009 No_date   28:10   63.16  n/a     .000
      [RDT= 1.00] out<-    1.0 01:105-106A      95.37    3.009 No_date   28:04   63.16  n/a     .000
       [L/S/n=  208./ .100/.013]
       {Vmax= 1.597:Dmax= 1.249}
       [Din= 1.80:Dused= 1.80}
R0100:C00355------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:360-106A       7.00     .629 No_date   28:31   62.97  n/a     .000
                      +    1.0 02:105-106A      95.37    3.009 No_date   28:04   63.16  n/a     .000
                      +    1.0 02:B6R-MN         5.42     .064 No_date   27:33   62.85  n/a     .000
                      +    1.0 02:B6R-MJ          .00     .000 No_date    0:00     .00  n/a     .000
                  SUM=     1.0 01:MH106A       107.80    3.702 No_date   28:10   63.13  n/a     .000
R0100:C00356------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD               1.0 01:MH106A       107.80    3.702 No_date   28:10   63.13  n/a     .000
       fname :MH106A.0100
       remark:Total Flows at MH106A
R0100:C00357------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->     1.0 02:MH106A       107.80    3.702 No_date   28:10   63.13  n/a     .000
 *    [RDT= 1.00] out<-    1.0 01:106A-106     107.80    3.757 No_date   28:13   63.13  n/a     .000
       [L/S/n=  190./ .100/.013]
       {Vmax= 1.635:Dmax= 1.487}
       [Din= 1.80:Dused= 1.81}
R0100:C00358------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD    1.0 01:A9             2.44     .539 No_date   28:00   73.40 .829     .000
       [XIMP=.71:TIMP=.71]
       [LOSS= 2 :CN= 75.0]
       [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 262.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 33.81: SMAX=225.43: SK= .010]
R0100:C00359------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD        1.0 01:A9             2.44     .539 No_date   28:00   73.40  n/a     .000
     Major System   /      1.0 02:A9-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \      1.0 03:A9-MN          2.44     .539 No_date   28:00   73.40  n/a     .000
R0100:C00360------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:106A-106     107.80    3.757 No_date   28:13   63.13  n/a     .000
                      +    1.0 02:A9-MN          2.44     .539 No_date   28:00   73.40  n/a     .000
                  SUM=     1.0 01:MH106        110.24    4.227 No_date   28:00   63.36  n/a     .000
R0100:C00361------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD               1.0 01:MH106        110.24    4.227 No_date   28:00   63.36  n/a     .000
       fname :MH106.0100
       remark:Total Flows at MH106
R0100:C00362------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->     1.0 02:MH106        110.24    4.227 No_date   28:00   63.36  n/a     .000
 *    [RDT= 1.00] out<-    1.0 01:106-107      110.24    4.179 No_date   28:02   63.36  n/a     .000
       [L/S/n=  123./ .100/.013]
       {Vmax= 1.690:Dmax= 1.563}
       [Din= 1.80:Dused= 1.90}
R0100:C00363------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD    1.0 01:A10            4.14     .693 No_date   28:01   59.73 .674     .000
       [XIMP=.35:TIMP=.47]
       [LOSS= 2 :CN= 75.0]
       [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 183.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 33.81: SMAX=225.43: SK= .010]
R0100:C00364------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD        1.0 01:A10            4.14     .693 No_date   28:01   59.73  n/a     .000
```

```
     Major System   /     1.0 02:A10-MJ          .09      .218 No_date   28:05   59.73  n/a      .000
     Minor System   \     1.0 03:A10-MN         4.05      .310 No_date   27:48   60.02  n/a      .000
      {MjSysSto=.2280E+03, TotOvfVol=.5334E+02, N-Ovf=    1, TotDurOvf=    0.hrs}
R0100:C00365------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A11           10.61     1.941 No_date   28:01   67.38 .761      .000
      [XIMP=.53:TIMP=.62]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 379.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0100:C00366------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A11           10.61     1.941 No_date   28:01   67.38  n/a      .000
     Major System   /     1.0 02:A11-MJ          .16      .564 No_date   28:06   67.38  n/a      .000
     Minor System   \     1.0 03:A11-MN        10.45      .993 No_date   28:34   67.69  n/a      .000
      {MjSysSto=.5560E+03, TotOvfVol=.1090E+03, N-Ovf=    1, TotDurOvf=    0.hrs}
R0100:C00367------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:106-107      110.24     4.179 No_date   28:02   63.36  n/a      .000
                    +     1.0 02:A10-MN         4.05      .310 No_date   27:48   60.02  n/a      .000
                    +     1.0 02:A11-MN        10.45      .993 No_date   28:34   67.69  n/a      .000
                 SUM=     1.0 01:MH107        124.74     5.482 No_date   28:02   63.62  n/a      .000
R0100:C00368------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH107        124.74     5.482 No_date   28:02   63.62  n/a      .000
      fname :MH107.0100
      remark:Total Flows at MH107
R0100:C00369------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH107        124.74     5.482 No_date   28:02   63.62  n/a      .000
 *   [RDT= 1.00] out<-    1.0 01:107-119      124.74     5.468 No_date   28:04   63.62  n/a      .000
      [L/S/n=  114./ .120/.013]
      {Vmax= 1.932:Dmax= 1.665}
      [Din= 1.80:Dused= 2.03}
R0100:C00370------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:107-119      124.74     5.468 No_date   28:04   63.62  n/a      .000
 *   [RDT= 1.00] out<-    1.0 01:119-108      124.74     5.480 No_date   28:05   63.62  n/a      .000
      [L/S/n=   66./ .120/.013]
      {Vmax= 1.930:Dmax= 1.664}
      [Din= 1.80:Dused= 2.03}
R0100:C00371------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A12           12.29     2.213 No_date   28:01   62.88 .710      .000
      [XIMP=.41:TIMP=.54]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 183.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0100:C00372------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A12           12.29     2.213 No_date   28:01   62.88  n/a      .000
     Major System   /     1.0 02:A12-MJ          .23      .599 No_date   28:05   62.88  n/a      .000
     Minor System   \     1.0 03:A12-MN        12.06     1.029 No_date   27:48   63.11  n/a      .000
      {MjSysSto=.6720E+03, TotOvfVol=.1477E+03, N-Ovf=    1, TotDurOvf=    0.hrs}
R0100:C00373------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A13            2.59      .540 No_date   28:01   73.40 .829      .000
      [XIMP=.71:TIMP=.71]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 379.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0100:C00374------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A13            2.59      .540 No_date   28:01   73.40  n/a      .000
     Major System   /     1.0 02:A13-MJ          .00      .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:A13-MN         2.59      .540 No_date   28:01   73.40  n/a      .000
R0100:C00375------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:Pond-Block     2.94      .490 No_date   28:00   59.56 .673      .000
      [XIMP=.41:TIMP=.41]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 183.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0100:C00376------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:119-108      124.74     5.480 No_date   28:05   63.62  n/a      .000
                    +     1.0 02:A13-MN         2.59      .540 No_date   28:01   73.40  n/a      .000
                    +     1.0 02:A12-MN        12.06     1.029 No_date   27:48   63.11  n/a      .000
                 SUM=     1.0 01:MH108        139.38     6.996 No_date   28:03   63.75  n/a      .000
R0100:C00377------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH108        139.38     6.996 No_date   28:03   63.75  n/a      .000
      fname :MH108.0100
      remark:Total Flows at MH108
R0100:C00378------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH108        139.38     6.996 No_date   28:03   63.75  n/a      .000
 *   [RDT= 1.00] out<-    1.0 01:108-116      139.38     6.987 No_date   28:04   63.75  n/a      .000
      [L/S/n=   77./ .130/.013]
      {Vmax= 2.116:Dmax= 1.798}
      [Din= 1.80:Dused= 2.19}
R0100:C00379------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:108-116      139.38     6.987 No_date   28:04   63.75  n/a      .000
 *   [RDT= 1.00] out<-    1.0 01:116-corrig   139.38     6.949 No_date   28:06   63.75  n/a      .000
      [L/S/n=   80./ .130/.013]
      {Vmax= 2.115:Dmax= 1.797}
      [Din= 1.80:Dused= 2.19}
R0100:C00380------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:116-corrig   139.38     6.949 No_date   28:06   63.75  n/a      .000
                    +     1.0 02:Pond-Block     2.94      .490 No_date   28:00   59.56  n/a      .000
                 SUM=     1.0 01:Corrigan     142.32     7.300 No_date   28:04   63.67  n/a      .000
R0100:C00381------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:Corrigan     142.32     7.300 No_date   28:04   63.67  n/a      .000
      fname :Corrigan.0100
      remark:HYD_COMMENT=["Total Flows at Corrigan Pond]
R0100:C00382------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:Corrigan     142.32     7.300 No_date   28:04   63.67  n/a      .000
                out <=    1.0 01:Co-P         142.32     6.658 No_date   28:15   63.67  n/a      .000
           overflow <=    1.0 03:Co-P-OVF        .00      .000 No_date    0:00     .00  n/a      .000
     {MxStoUsed=.1044E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00383------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:Co-P-OVF        .00      .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:Co-P         142.32     6.658 No_date   28:15   63.67  n/a      .000
                    +     1.0 02:N_TO       54840.70   147.653 No_date   36:19   39.31  n/a      .000
                    +     1.0 02:MH105-JR      36.57     8.679 No_date   28:10   63.16  n/a      .000
                    +     1.0 02:A8-MJ-JR        .00      .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:A9-MJ           .00      .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:A10-MJ          .09      .218 No_date   28:05   59.73  n/a      .000
                    +     1.0 02:A11-MJ          .16      .564 No_date   28:06   67.38  n/a      .000
                    +     1.0 02:A12-MJ          .23      .599 No_date   28:05   62.88  n/a      .000
                    +     1.0 02:A13-MJ          .00      .000 No_date    0:00     .00  n/a      .000
                 SUM=     1.0 01:corrig     55020.08   148.408 No_date   36:18   39.39  n/a      .000
R0100:C00384------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:corrig     55020.08   148.408 No_date   36:18   39.39  n/a      .000
      fname :corrig.0100
      remark:Total Flows at Corrigan Pond
#*****************************************************************************
#    Corrigan Pond 1
#    - Rating curve obtained from Barrhaven South MSS modeling
#    - Tributary Drainage Area to MSS Pond 1 = 145 ha
#*****************************************************************************
#
# Hydrograph from Corrigan Drain routed to Jockvale Road
# Channel X-Section obtained from RVCA Hydraulic Model - Station 2462
#
R0100:C00385------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:corrig     55020.08   148.408 No_date   36:18   39.39  n/a      .000
     [RDT= 1.00] out<-    1.0 01:N_MI       55020.08   148.389 No_date   36:21   39.39  n/a      .000
      [L/S/n=  580./ .445/.045]
      {Vmax= 2.187:Dmax= 2.147}
#*****************************************************************************
#    Catchment MILLS
#    - To SWM Facility north of the Jock
#    - Primarily residental development
#*****************************************************************************
R0100:C00386------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:MILLS        175.99    20.390 No_date   28:06   56.87 .642      .000
      [XIMP=.38:TIMP=.38]
      [LOSS= 2 :CN= 74.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI=1118.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 36.67: SMAX=244.49: SK= .010]
#*****************************************************************************
#    Chapman Mills SWM Pond
#    - Rating curve obtained from CCL hydraulic modeling
#*****************************************************************************
R0100:C00387------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:MILLS        175.99    20.390 No_date   28:06   56.87  n/a      .000
                out <=    1.0 01:MILL_P       146.22     4.050 No_date   28:08   56.87  n/a      .000
           overflow <=    1.0 03:MIL-OV        29.77    16.228 No_date   28:08   56.87  n/a      .000
     {MxStoUsed=.2310E+01  m3, TotOvfVol=.1693E+01  m3, N-Ovf=    2, TotDurOvf=    1.hrs}
R0100:C00388------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N_MI       55020.08   148.389 No_date   36:21   39.39  n/a      .000
                    +     1.0 02:MIL-OV        29.77    16.228 No_date   28:08   56.87  n/a      .000
                    +     1.0 02:MILL_P       146.22     4.050 No_date   28:08   56.87  n/a      .000
                 SUM=     1.0 01:SN_MI      55196.07   149.100 No_date   36:20   39.44  n/a      .000
R0100:C00389------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_MI      55196.07   149.100 No_date   36:20   39.44  n/a      .000
      fname :SN_MI.0100
      remark:Total Flows at Jockvale Road
#
# Hydrograph from Jockvale Road routed to Heart's Desire
# Channel X-Section obtained from RVCA Hydraulic Model - Station 689
#
R0100:C00390------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_MI      55196.07   149.100 No_date   36:20   39.44  n/a      .000
     [RDT= 1.00] out<-    1.0 01:N_DE       55196.07   148.761 No_date   36:32   39.44  n/a      .000
      [L/S/n= 1962./ .223/.045]
      {Vmax= 1.650:Dmax= 2.683}
#*****************************************************************************
#    Catchment DESIRE
#    - To Jock River (north of the Jock)
#    - Rural-estate subdivision (Heart's Desire Community)
#*****************************************************************************
R0100:C00391------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:DESIRE        23.78     3.004 No_date   28:03   53.11 .600      .000
      [XIMP=.25:TIMP=.25]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 400.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
```

```
#*****************************************************************************
#    Catchment JOCKVA
#    - To Jockvale SWM Facility
#    - Residential development & golf course
#    - JFSA 2021-01-11 update JOCKVA after updating CORRIG as per IBI GROUP, July 2008.
#      JOCKVA area became 225.13 ha instead of 257.63 ha. JOCKVA separated into two areas JOCKVA and EX-LAND 32.5 ha as
#*****************************************************************************
R0100:C00392------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:JOCKVA       225.13    28.623 No_date   28:07   62.70 .708      .000
      [XIMP=.50:TIMP=.50]
      [LOSS= 2 :CN= 74.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI=1311.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 36.67: SMAX=244.49: SK= .010]
R0100:C00393------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:EX-LAND-MN    30.73     2.275 No_date   27:48   62.82  n/a      .000
                    +     1.0 02:JOCKVA       225.13    28.623 No_date   28:07   62.70  n/a      .000
                    +     1.0 02:B2-MJ           .36      .820 No_date   28:05   62.88  n/a      .000
                    +     1.0 02:B3-MJ           .19      .402 No_date   28:04   62.88  n/a      .000
                 SUM=     1.0 01:JOCKVA-TO    256.41    31.850 No_date   28:06   62.71  n/a      .000
R0100:C00394------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:JOCKVA-TO    256.41    31.850 No_date   28:06   62.71  n/a      .000
      fname :JOCKVA-TO.0100
      remark:Total Flows at KB first pond
#*****************************************************************************
#    Jockvale SWM Facility
#    - Rating curve obtained from Jockvale Servicing Study (CCL 1999)
#*****************************************************************************
R0100:C00395------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:JOCKVA-TO    256.41    31.850 No_date   28:06   62.71  n/a      .000
                out <=    1.0 01:JOCK_P       256.41    12.850 No_date   28:35   62.71  n/a      .000
           overflow <=    1.0 03:JO-OVF          .00      .000 No_date    0:00     .00  n/a      .000
     {MxStoUsed=.6430E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00396------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N_DE       55196.07   148.761 No_date   36:32   39.44  n/a      .000
                    +     1.0 02:DESIRE        23.78     3.004 No_date   28:03   53.11  n/a      .000
                    +     1.0 02:JO-OVF          .00      .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:JOCK_P       256.41    12.850 No_date   28:35   62.71  n/a      .000
                 SUM=     1.0 01:SN_DE      55476.26   149.819 No_date   36:30   39.56  n/a      .000
R0100:C00397------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_DE      55476.26   149.819 No_date   36:30   39.56  n/a      .000
      fname :SN_DE.0100
      remark:Total Flows at Heart's Desire
#
# Hydrograph from Heart's Desire routed to Rideau River
# Channel X-Section obtained from RVCA Hydraulic Model - Station 0
#
R0100:C00398------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_DE      55476.26   149.819 No_date   36:30   39.56  n/a      .000
     [RDT= 1.00] out<-    1.0 01:N1         55476.26   149.806 No_date   36:33   39.56  n/a      .000
      [L/S/n=  563./ .967/.045]
      {Vmax= 2.234:Dmax= 1.340}
#*****************************************************************************
#    Catchment S-2
#    - To Jock River (north and south)
#    - Undeveloped floodplain and river
#*****************************************************************************
R0100:C00399------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:S-2          102.94     5.685 No_date   28:20   40.95 .462      .000
      [CN= 72.0: N= 3.00: Tp=  .40]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
R0100:C00400------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N1         55476.26   149.806 No_date   36:33   39.56  n/a      .000
                    +     1.0 02:S-2          102.94     5.685 No_date   28:20   40.95  n/a      .000
                 SUM=     1.0 01:SN_N1      55579.20   150.120 No_date   36:32   39.56  n/a      .000
R0100:C00401------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_N1      55579.20   150.120 No_date   36:32   39.56  n/a      .000
      fname :SN_N1.0100
      remark:Total Flows at Rideau River
##############################################################################
R0100:C00002----------------------------------------------------------------------------------------
    FINISH
----------------------------------------------------------------------------------------------------
****************************************************************************************************
     WARNINGS / ERRORS / NOTES
     -------------------------
R0002:C00281  ROUTE RESERVOIR
*** WARNING: Inflow peak was not reduced! Check OUTFLOW/STORAGE table or reduce DT.
R0002:C00303  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0002:C00309  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0002:C00342  DIVERT HYD      ->
*** NOTE: Inflow hyd. is dry and cannot be diverted.
R0002:C00362  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0002:C00369  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0002:C00370  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0002:C00378  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0002:C00379  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0005:C00281  ROUTE RESERVOIR
*** WARNING: Inflow peak was not reduced! Check OUTFLOW/STORAGE table or reduce DT.
R0005:C00303  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0005:C00309  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0005:C00325  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0005:C00326  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0005:C00334  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0005:C00342  DIVERT HYD      ->
*** NOTE: Inflow hyd. is dry and cannot be diverted.
R0005:C00357  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0005:C00362  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0005:C00369  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0005:C00370  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0005:C00378  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0005:C00379  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0010:C00303  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0010:C00309  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0010:C00325  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0010:C00326  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0010:C00334  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0010:C00342  DIVERT HYD      ->
*** NOTE: Inflow hyd. is dry and cannot be diverted.
R0010:C00357  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0010:C00362  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0010:C00369  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0010:C00370  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0010:C00378  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0010:C00379  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0025:C00303  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0025:C00309  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0025:C00325  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0025:C00326  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0025:C00334  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0025:C00342  DIVERT HYD      ->
*** NOTE: Inflow hyd. is dry and cannot be diverted.
R0025:C00357  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0025:C00362  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0025:C00369  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0025:C00370  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0025:C00378  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0025:C00379  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0050:C00303  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0050:C00309  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0050:C00325  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0050:C00326  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0050:C00334  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0050:C00342  DIVERT HYD      ->
*** NOTE: Inflow hyd. is dry and cannot be diverted.
R0050:C00357  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0050:C00362  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0050:C00369  ROUTE PIPE      ->
```

```
*** WARNING: New pipe size used for routing.
R0050:C00370  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0050:C00378  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0050:C00379  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0100:C00303  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0100:C00309  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0100:C00325  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0100:C00326  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0100:C00334  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0100:C00342  DIVERT HYD      ->
*** NOTE: Inflow hyd. is dry and cannot be diverted.
R0100:C00357  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0100:C00362  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0100:C00369  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0100:C00370  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0100:C00378  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0100:C00379  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
   Simulation ended on 2021-03-04     at 11:53:36
====================================================================================================
```

Ottawa. ON
Paris. ON
Gatineau. QC
Montréal. QC
Québec. QC

Attachment D

Model 4A – Jock River Reach One Future Conditions – Without SWM controls

JFSA, 2021

SWMHYMO Input & Summary files

```
20    Metric units / ID numbers OFF
*#******************************************************************************
*#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
*#******************************************************************************
*#  Project Name: [Jock River]    Project Number: [1474-16]
*#  Date         : 04-03-2021
*#  Modeller     : [M.M.]
*#  Company      : JFSAinc.
*#  License #    :  2549237
*#******************************************************************************
*# CALIBRATION OF SUMMER MODEL PARAMETERS
*# USING CONTINUOUS SIMULATIONS
*# Rainfall data from JFSA raingauge installed at site + other gauges by the City
*# Use data collected from May 1st to July 14, 2003
*# 2020-11-30 change TMJSTO in COMPUTE DUALHYD (TMJSTO = 0.1 instead of 0.0001)
*# 2020-12-01 correct pond curve values
*# 2020-12-01 change W_CLAR_BRAZ XIMP to 0.55, SLPI=[0.5](%) (impervious slope), and LGI up to 700m
*# 2021-02-19 Change the slope for ROUTE CHANNEL Station 2462 (NHYDout=["N_TO"],NHYDin=["SN_TO"]) from 0.033 % (as per Stantec Report 2007) to 0.05 % so the model will be more stable and give reasonable results. It is justifiable as ROUTE CHANNELs aren't well suited to really flat slopes.
*# 2021-02-19 Change the slope for ROUTE CHANNEL Station 5002 (NHYDout=["N_WC"],NHYDin=["SN_CE"]) from 0.01 % (as per Stantec Report 2007) to 0.0255 % so the model will be more stable and give reasonable results. It is justifiable as ROUTE CHANNELs aren't well suited to really flat slopes.
*
* Calibrated parameters for Summer 2003 data:  APII=50, APIK=0.85, CN=varies,
*                                              SK=0.01, InterEventTime=12,
*                                              GWResk=0.96, VHydCond=0.055
*
*# ----------------------------------------------------------------------------
*
*START                TZERO=[2003.0501],  METOUT=[2],  NSTORM=[1],  NRUN=[001]
*                     ["XAVG0315.STM"] average storm data a 15 minute time step
*                     The above rainf file is an average of the JFSA gauge data
*                     with the City of Ottawa rainfall data collected during
*                     the same period.
*%  2 yr, 24 hr SCS storm based on OTTAWA CDA IDF Curves
START                TZERO=[0.0],  METOUT=[2],  NSTORM=[1],  NRUN=[2]
                     ["C24SC002.stm"] <--storm filename, one per line for NSTORM time
*%-----------------|-------------------------------------------------------------|
*%-----------------|-------------------------------------------------------------|
READ STORM           STORM_FILENAME=["storm.001"]
*%-----------------|-------------------------------------------------------------|
MODIFY STORM         ICASEms=[1],  NSHIFT=[96],
                     RedFACT=[1],
*%-----------------|-------------------------------------------------------------|
DEFAULT VALUES       ICASEdef=[1],  read and print values
                     DEFVAL_FILENAME=["CitiGate.DEF"]
*%-----------------|-------------------------------------------------------------|
COMPUTE API          APII=[50], APIK=[.85]/day
*%-----------------|-------------------------------------------------------------|
*%-----------------|-------------------------------------------------------------|
*#
*# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
*# of 1.32
*%-----------------|-------------------------------------------------------------|
CONTINUOUS NASHYD    NHYD=["JR_HW"], DT=[1]min, AREA=[3680](ha),
                     DWF=[0](cms),  CN/C=[64], IA=[2.5](mm),
                     N=[3.0], TP=[7.13]hrs,
                     Continuous simulation parameters:
                     IaRECper=[4](hrs),
                     SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                     InterEventTime=[12](hrs)
                     Baseflow simulation parameters:
```

```
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
*#
*# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
*# of 1.32
*%-----------------|-----------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["SW_13"], DT=[1]min, AREA=[971](ha),
                    DWF=[0](cms),  CN/C=[61], IA=[2.5](mm),
                    N=[3.0], TP=[3.76]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
*#
*# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
*# of 1.80
*%-----------------|-----------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["JR_GWM"], DT=[1]min, AREA=[3074](ha),
                    DWF=[0](cms),  CN/C=[55], IA=[2.5](mm),
                    N=[3], TP=[11.33]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["JR_ASH"], DT=[1]min, AREA=[1781](ha),
                    DWF=[0](cms),  CN/C=[72], IA=[2.5](mm),
                    N=[3.0], TP=[3.91]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["SW_11"], DT=[1]min, AREA=[500](ha),
                    DWF=[0](cms),  CN/C=[66], IA=[2.5](mm),
                    N=[3.0], TP=[1.24]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
*#
*# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
*# of 1.80
*%-----------------|-----------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["NN_CK"], DT=[1]min, AREA=[1917](ha),
                    DWF=[0](cms),  CN/C=[66], IA=[2.5](mm),
```

```
                      N=[3.0], TP=[5.29]hrs,
                      Continuous simulation parameters:
                      IaRECper=[4](hrs),
                      SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                      InterEventTime=[12](hrs)
                      Baseflow simulation parameters:
                      BaseFlowOption=[1] ,
                      InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                      VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
*#
*# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
*# of 1.52
*%-----------------|-----------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["SW_10"], DT=[1]min, AREA=[5666](ha),
                      DWF=[0](cms),  CN/C=[72], IA=[2.5](mm),
                      N=[3.0], TP=[8.00]hrs,
                      Continuous simulation parameters:
                      IaRECper=[4](hrs),
                      SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                      InterEventTime=[12](hrs)
                      Baseflow simulation parameters:
                      BaseFlowOption=[1] ,
                      InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                      VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
*#
*# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
*# of 1.75
*%-----------------|-----------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["KG_CK"], DT=[1]min, AREA=[8376](ha),
                      DWF=[0](cms),  CN/C=[66], IA=[2.5](mm),
                      N=[3.0], TP=[11.66]hrs,
                      Continuous simulation parameters:
                      IaRECper=[4](hrs),
                      SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                      InterEventTime=[12](hrs)
                      Baseflow simulation parameters:
                      BaseFlowOption=[1] ,
                      InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                      VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
*#
*# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
*# of 1.68
*%-----------------|-----------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["SW_9"], DT=[1]min, AREA=[1132](ha),
                      DWF=[0](cms),  CN/C=[70], IA=[2.5](mm),
                      N=[3.0], TP=[2.51]hrs,
                      Continuous simulation parameters:
                      IaRECper=[4](hrs),
                      SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                      InterEventTime=[12](hrs)
                      Baseflow simulation parameters:
                      BaseFlowOption=[1] ,
                      InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                      VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
*#
*# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
*# of 1.82
*%-----------------|-----------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["NC_CK"], DT=[1]min, AREA=[4464](ha),
                      DWF=[0](cms),  CN/C=[62], IA=[2.5](mm),
                      N=[3.0], TP=[11.32]hrs,
                      Continuous simulation parameters:
```

```
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|------------------------------------------------------------|
*#
*# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
*# of 1.80
*%-----------------|------------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["SW_8"], DT=[1]min, AREA=[131](ha),
                    DWF=[0](cms),  CN/C=[63], IA=[2.5](mm),
                    N=[3.0], TP=[0.90]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|------------------------------------------------------------|
*#
*# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
*# of 1.65
*%-----------------|------------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["HB_DR"], DT=[1]min, AREA=[3854](ha),
                    DWF=[0](cms),  CN/C=[66], IA=[2.5](mm),
                    N=[3.0], TP=[8.42]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|------------------------------------------------------------|
*#
*# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
*# of 1.82
*%-----------------|------------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["SW_7"], DT=[1]min, AREA=[3197](ha),
                    DWF=[0](cms),  CN/C=[57], IA=[2.5](mm),
                    N=[3.0], TP=[6.65]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|------------------------------------------------------------|
*#
*# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
*# of 1.75
*%-----------------|------------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["SW_6"], DT=[1]min, AREA=[165](ha),
                    DWF=[0](cms),  CN/C=[67], IA=[2.5](mm),
                    N=[3.0], TP=[4.18]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
```

```
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-------------------------------------------------------------|
*#
*# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
*# of 1.67
*%-----------------|-------------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["VG_DR"], DT=[1]min, AREA=[1332](ha),
                    DWF=[0](cms),  CN/C=[72], IA=[2.5](mm),
                    N=[3.0], TP=[5.95]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-------------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["SW_5"], DT=[1]min, AREA=[224](ha),
                    DWF=[0](cms),  CN/C=[77], IA=[2.5](mm),
                    N=[3.0], TP=[0.75]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-------------------------------------------------------------|
*#
*# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
*# of 1.20
*%-----------------|-------------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["FL_CK"], DT=[1]min, AREA=[4945](ha),
                    DWF=[0](cms),  CN/C=[74], IA=[2.5](mm),
                    N=[3.0], TP=[4.45]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-------------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["SW_5A2"], DT=[1]min, AREA=[20](ha),
                    DWF=[0](cms),  CN/C=[81], IA=[2.5](mm),
                    N=[3.0], TP=[0.62]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-------------------------------------------------------------|
*#
*# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
*# of 1.61
*%-----------------|-------------------------------------------------------------|
```

```
CONTINUOUS NASHYD    NHYD=["SW_5A1"], DT=[1]min, AREA=[1412](ha),
                     DWF=[0](cms),  CN/C=[75], IA=[2.5](mm),
                     N=[3.0], TP=[8.00]hrs,
                     Continuous simulation parameters:
                     IaRECper=[4](hrs),
                     SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                     InterEventTime=[12](hrs)
                     Baseflow simulation parameters:
                     BaseFlowOption=[1] ,
                     InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                     VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
CONTINUOUS NASHYD    NHYD=["SW_4"], DT=[1]min, AREA=[585](ha),
                     DWF=[0](cms),  CN/C=[81], IA=[2.5](mm),
                     N=[3.0], TP=[1.75]hrs,
                     Continuous simulation parameters:
                     IaRECper=[4](hrs),
                     SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                     InterEventTime=[12](hrs)
                     Baseflow simulation parameters:
                     BaseFlowOption=[1] ,
                     InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                     VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
CONTINUOUS NASHYD    NHYD=["LM_CK"], DT=[1]min, AREA=[1021](ha),
                     DWF=[0](cms),  CN/C=[80], IA=[2.5](mm),
                     N=[3.0], TP=[2.46]hrs,
                     Continuous simulation parameters:
                     IaRECper=[4](hrs),
                     SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                     InterEventTime=[12](hrs)
                     Baseflow simulation parameters:
                     BaseFlowOption=[1] ,
                     InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                     VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
CONTINUOUS NASHYD    NHYD=["SW_2"], DT=[1]min, AREA=[177](ha),
                     DWF=[0](cms),  CN/C=[77], IA=[2.5](mm),
                     N=[3.0], TP=[0.75]hrs,
                     Continuous simulation parameters:
                     IaRECper=[4](hrs),
                     SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                     InterEventTime=[12](hrs)
                     Baseflow simulation parameters:
                     BaseFlowOption=[1] ,
                     InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                     VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
CONTINUOUS NASHYD    NHYD=["SM_DR"], DT=[1]min, AREA=[1122](ha),
                     DWF=[0](cms),  CN/C=[81], IA=[2.5](mm),
                     N=[3.0], TP=[3.25]hrs,
                     Continuous simulation parameters:
                     IaRECper=[4](hrs),
                     SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                     InterEventTime=[12](hrs)
                     Baseflow simulation parameters:
                     BaseFlowOption=[1] ,
                     InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                     VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
CONTINUOUS NASHYD    NHYD=["MO_DR"], DT=[1]min, AREA=[2737](ha),
                     DWF=[0](cms),  CN/C=[76], IA=[2.5](mm),
                     N=[3.0], TP=[3.03]hrs,
                     Continuous simulation parameters:
                     IaRECper=[4](hrs),
                     SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
```

```
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
*    -JFSA 2020 replaced SW_1 with a detailed model from Stantec Report 2007
*CONTINUOUS NASHYD   NHYD=["SW_1"], DT=[1]min, AREA=[3176](ha),
*                    DWF=[0](cms),  CN/C=[78], IA=[2.5](mm),
*                    N=[3.0], TP=[3.56]hrs,
*                    Continuous simulation parameters:
*                    IaRECper=[4](hrs),
*                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                    InterEventTime=[12](hrs)
*                    Baseflow simulation parameters:
*                    BaseFlowOption=[1] ,
*                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
*                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
*#
*# Routing hydrographs
*#
*# Starting with the addition of Jock River Headwater and Subwatershed 13
*#
ADD HYD             NHYDsum=["S_N13"], NHYDs to add=["JR_HW"+"SW_13"]
*%-----------------|-----------------------------------------------------------|
*#
*# Sum of hydrographs from Node 13 routed to Node 13A
*# (Approximated cross-section - see cross-section 258)
*# Use n=0.04 for summer conditions and n=0.025 for spring conditions
*#
ROUTE CHANNEL       NHYDout=["N13A"] ,NHYDin=["S_N13"],
                    RDT=[1](min),
                    CHLGTH=[9074](m),  CHSLOPE=[0.0220](%),
                                        FPSLOPE=[0.0220](%),
                    SECNUM=[1.0],       NSEG=[1]
                    ( SEGROUGH, SEGDIST (m))=[0.04,15.5] NSEG times
                    ( DISTANCE (m), ELEVATION (m))=
                          [-40, 132.5]
                          [-30, 132]
                          [-25, 131.5]
                          [-13, 130]
                          [-8, 127.00]
                          [-7, 126.50]
                          [-6, 126]
                          [-5.5, 125.50]
                          [0, 123.75]
                          [4.5, 125.50]
                          [6, 126]
                          [7.5, 126.5]
                          [9, 127]
                          [10, 127.5]
                          [11.5, 128.0]
                          [15.5, 129.5]
*%-----------------|-----------------------------------------------------------|
*#
*# Addition of Subwatershed Jock River at Goodwood Marsh to Node 13A
*#
ADD HYD             NHYDsum=["SN13A"], NHYDs to add=["N13A"+"JR_GWM"]
*%-----------------|-----------------------------------------------------------|
*#
*# Insertion of a reservoir to simulate the effects of the Goodwood Marsh
*#
ROUTE RESERVOIR     NHYDout=["RES_GM"] ,NHYDin=["SN13A"],
                    RDT=[1](min),
                          TABLE of ( OUTFLOW-STORAGE ) values
```

```
                                      (cms) - (ha-m)
                                    [   0.0 ,  0.0 ]
                                    [1.991, 2.144    ]
                                    [2.693, 39.826   ]
                                    [3.509, 81.697   ]
                                    [4.578, 318.774  ]
                                    [5.647, 594.947  ]
                                    [7.109, 910.219  ]
                                    [8.616, 1264.589  ]
                                    [10.371, 1658.057  ]
                                    [12.402, 2090.622 ]
                                    [22.056, 3462.487 ]
                                    [   -1  ,  -1  ]  (max twenty pts)
                          NHYDovf=["      "] ,
*%-----------------|------------------------------------------------------------|
*#
SAVE HYD            NHYD=["RES_GM"],  # OF PCYCLES=[-1],  ICASEsh=[-1]
                    HYD_FILENAME=["H_RESGM"]
                    HYD_COMMENT=["Outflow from Res GM"]
*%-----------------|------------------------------------------------------------|
*# Output of Reservoir Goodwood Marsh routed from Node 13A to Node 12
*# (Approximated cross-section - see cross-section 258)
*# Use n=0.04 for summer conditions and n=0.025 for spring conditions
ROUTE CHANNEL       NHYDout=["N12"] ,NHYDin=["RES_GM"] ,
                    RDT=[1](min),
                    CHLGTH=[5926](m),  CHSLOPE=[0.0759](%),
                                        FPSLOPE=[0.0759](%),
                    SECNUM=[1.0],       NSEG=[1]
                    ( SEGROUGH, SEGDIST (m))=[0.04,15.5] NSEG times
                    ( DISTANCE (m), ELEVATION (m))=
                          [-40, 132.5]
                          [-30, 132]
                          [-25, 131.5]
                          [-13, 130]
                          [-8, 127.00]
                          [-7, 126.50]
                          [-6, 126]
                          [-5.5, 125.50]
                          [0, 123.75]
                          [4.5, 125.50]
                          [6, 126]
                          [7.5, 126.5]
                          [9, 127]
                          [10, 127.5]
                          [11.5, 128.00]
                          [15.5, 129.5]
*%-----------------|------------------------------------------------------------|
*#
*# Addition of Subwatershed Jock River at Ashton to Node 12
*#
ADD HYD             NHYDsum=["S_N12"], NHYDs to add=["N12"+"JR_ASH"]
SAVE HYD            NHYD=["S_N12"],  # OF PCYCLES=[-1],  ICASEsh=[-1]
                    HYD_FILENAME=["H_SN12"]
                    HYD_COMMENT=["flow at S_N12 near Ashton"]
*%-----------------|------------------------------------------------------------|
*#
*# Sum of hydrographs from Node 12 routed to Node 11
*# (Approximated cross-section - see cross-section 258)
*# Use n=0.04 for summer conditions and n=0.025 for spring conditions
*ROUTE CHANNEL       NHYDout=["N11"] ,NHYDin=["S_N12"] ,
*                    RDT=[1](min),
*                    CHLGTH=[972](m),  CHSLOPE=[0.0514](%),
*                                        FPSLOPE=[0.0514](%),
*                    SECNUM=[1.0],       NSEG=[1]
*                    ( SEGROUGH, SEGDIST (m))=[0.04,15.5] NSEG times
*                    ( DISTANCE (m), ELEVATION (m))=
```

```
*                          [-40, 132.5]
*                          [-30, 132]
*                          [-25, 131.5]
*                          [-13, 130]
*                          [-8, 127.00]
*                          [-7, 126.50]
*                          [-6, 126]
*                          [-5.5, 125.50]
*                          [0, 123.75]
*                          [4.5, 125.50]
*                          [6, 126]
*                          [7.5, 126.5]
*                          [9, 127]
*                          [10, 127.5]
*                          [11.5, 128.00]
*                          [15.5, 129.5]
*%-----------------|-----------------------------------------------------------|
*#
*# Sum of hydrographs from Node 12 routed to Node 11 with Dummy section 248
*#
ROUTE CHANNEL       NHYDout=["Dum11"] ,NHYDin=["S_N12"] ,
                    RDT=[1](min),
                    CHLGTH=[972](m),  CHSLOPE=[0.054](%),
                                        FPSLOPE=[0.054](%),
                    SECNUM=[1.0],       NSEG=[1]
                    ( SEGROUGH, SEGDIST (m))=[0.04,15.5] NSEG times
                    ( DISTANCE (m), ELEVATION (m))=
                          [-40, 132.5]
                          [-30, 132]
                          [-25, 131.5]
                          [-13, 130]
                          [-8, 127.00]
                          [-7, 126.50]
                          [-6, 126]
                          [-5.5, 125.50]
                          [0, 123.75]
                          [4.5, 125.50]
                          [6, 126]
                          [7.5, 126.5]
                          [9, 127]
                          [10, 127.5]
                          [11.5, 128.00]
                          [15.5, 129.5]
*%-----------------|-----------------------------------------------------------|
*#
*# Addition of Subwatershed 11 and No Name Creek to Node 11
*#
ADD HYD             NHYDsum=["S_N11"], NHYDs to add=["Dum11"+"SW_11"+"NN_CK"]
*%-----------------|-----------------------------------------------------------|
*#
*# Sum of hydrographs from Node 11 routed to Node 10
*# Section 1
*#
ROUTE CHANNEL       NHYDout=["N10"] ,NHYDin=["S_N11"] ,
                    RDT=[1](min),
                    CHLGTH=[14028](m),  CHSLOPE=[0.1568](%),
                                        FPSLOPE=[0.1568](%),
                    SECNUM=[1.0],       NSEG=[5]
                    ( SEGROUGH, SEGDIST (m))=
                     [0.04,-52.82
                      0.1,-6.47
                      -0.05,6.47
                      0.1,45.36
                      0.04,423.88] NSEG times
                   ( DISTANCE (m), ELEVATION (m))=
                          [-226.24 ,112.50]
```

```
                          [-167.50 ,111.50]
                          [-106.81 ,111.00]
                          [-92.37 ,110.00]
                          [-52.82 ,109.00]
                          [-24.90, 109.00]
                          [-17.02, 108.50]
                          [-6.47, 108.00]
                          [6.47, 108.00]
                          [15.67, 108.50]
                          [18.95, 109.00]
                          [45.36, 109.50]
                          [120.79, 110.00]
                          [145.72, 111.00]
                          [181.56, 111.50]
                          [423.88, 112.50]
*%-----------------|------------------------------------------------------------|
*#
*# Addition of Subwatershed 10 to Node 10
*#
ADD HYD             NHYDsum=["S_N10"], NHYDs to add=["N10"+"SW_10"]
*%-----------------|------------------------------------------------------------|
SAVE HYD            NHYD=["S_N10"],  # OF PCYCLES=[-1],  ICASEsh=[-1]
                    HYD_FILENAME=["H_SN10"]
                    HYD_COMMENT=["flow at S_N10: N10 + SW_10"]
*%-----------------|------------------------------------------------------------|
*# Addition of Kings Creek to S_N10
*#
ADD HYD             NHYDsum=["S_N10A"], NHYDs to add=["S_N10"+"KG_CK"]
*%-----------------|------------------------------------------------------------|
*#
*# Sum of hydrographs from Node 10 routed to Node 9
*# Section 2
*#
ROUTE CHANNEL       NHYDout=["N9"] ,NHYDin=["S_N10A"] ,
                    RDT=[1](min),
                    CHLGTH=[3982](m),  CHSLOPE=[0.0753](%),
                                        FPSLOPE=[0.0753](%),
                    SECNUM=[1.0],       NSEG=[4]
                    ( SEGROUGH, SEGDIST (m))=
                      [0.04,-30.27
                       0.05,-18.42
                      -0.05,18.42
                      0.04,131.58] NSEG times
                    ( DISTANCE (m), ELEVATION (m))=
                          [-446.74, 106.00]
                          [-415.68, 105.50]
                          [-285.40, 105.00]
                          [-173.77, 104.50]
                          [-144.95, 104.00]
                          [-111.18, 103.50]
                          [-94.06, 103.00]
                          [-71.02, 102.50]
                          [-30.27, 102.00]
                          [-19.33, 100.00]
                          [-18.42, 99.50]
                          [18.42, 99.50]
                          [20.77, 100.00]
                          [27.93, 101.00]
                          [52.29, 101.00]
                          [68.80, 101.50]
                          [79.66, 103.00]
                          [91.50, 103.50]
                          [131.58, 104.00]
*%-----------------|------------------------------------------------------------|
*#
*# Addition of Subwatershed 9 and Nichols Creek to Node 9
```

```
*#
ADD HYD              NHYDsum=["S_N9"], NHYDs to add=["N9"+"SW_9"+"NC_CK"]
*%-----------------|------------------------------------------------------------|
*#
*# Sum of hydrographs from Node 9 routed to Node 8
*# Section 3
*#
ROUTE CHANNEL        NHYDout=["N8"] ,NHYDin=["S_N9"] ,
                     RDT=[1](min),
                     CHLGTH=[2269](m),  CHSLOPE=[0.0882](%),
                                         FPSLOPE=[0.0882](%),
                     SECNUM=[1.0],       NSEG=[3]
                     ( SEGROUGH, SEGDIST (m))=
                       [0.1,-17.99
                       -0.045,17.31
                       0.1,456.58] NSEG times
                     ( DISTANCE (m), ELEVATION (m))=
                           [-201.19,100.50]
                           [-135.21, 100.00]
                           [-94.83, 99.50]
                           [-67.05, 99.00]
                           [-17.99, 98.50]
                           [-16.02, 98.00]
                           [-13.95, 97.50]
                           [13.95, 97.50]
                           [15.64, 98.00]
                           [17.31, 98.50]
                           [162.02, 98.50]
                           [172.89 ,99.00]
                           [314.38, 99.00]
                           [343.78, 99.50]
                           [365.67, 100.00]
                           [376.68, 100.00 ]
                           [393.11, 99.50]
                           [404.97, 99.50]
                           [431.70, 100.00]
                           [456.58, 100.50 ]
*%-----------------|------------------------------------------------------------|
*#
*# Addition of Subwatershed 8 and Hobb's Drain to Node 8
*#
ADD HYD              NHYDsum=["S_N8"], NHYDs to add=["N8"+"SW_8"+"HB_DR"]
*%-----------------|------------------------------------------------------------|
*#
*# Sum of hydrographs from Node 8 routed to Node 7
*# Section 4
*#
ROUTE CHANNEL        NHYDout=["N7"] ,NHYDin=["S_N8"],
                     RDT=[1](min),
                     CHLGTH=[3750](m),  CHSLOPE=[0.0533](%),
                                         FPSLOPE=[0.0533](%),
                     SECNUM=[1.0],       NSEG=[3]
                     ( SEGROUGH, SEGDIST (m))=
                       [0.12,-18.11
                       -0.07,17.22
                       0.12,590.05] NSEG times
                     ( DISTANCE (m), ELEVATION (m))=
                           [-433.21, 102.00]
                           [-425.34, 101.50]
                           [-377.56, 101.50]
                           [-366.23, 101.00]
                           [-202.60, 100.50]
                           [-96.25, 99.50]
                           [-68.36 99.00]
                           [-18.11, 98.50]
                           [-13.81, 97.50]
```

```
                          [13.81, 97.50]
                          [17.22, 98.50]
                          [161.95, 98.50]
                          [173.11, 99.00]
                          [314.05, 99.00]
                          [365.52, 100.00]
                          [404.70, 99.50]
                          [476.74, 100.50]
                          [502.31, 101.00]
                          [584.69, 101.00]
                          [585.79, 101.00]
                          [590.05, 102.00]
*%-----------------|------------------------------------------------------------|
*#
*# Addition of Subwatershed 7 to Node 7
*#
ADD HYD             NHYDsum=["S_N7"], NHYDs to add=["N7"+"SW_7"]
*%-----------------|------------------------------------------------------------|
SAVE HYD            NHYD=["S_N7"],  # OF PCYCLES=[-1],  ICASEsh=[-1]
                    HYD_FILENAME=["H_SN7"]
                    HYD_COMMENT=["flow at S_N7: N7 + SW_7"]
*%-----------------|------------------------------------------------------------|
*# Insertion of a reservoir to simulate the effects of the Richmond Fen.
*# Storage area and volumes were estimated from available topo maps.
*# Release rate from fen was assumed to be controlled by the downstream
*# river cross-section for summer conditions.  It is was assumed that for up to
*# 0.75 m of water, the main channel of the river provided the storage.  Above
*# this depth, the wetland starts to signigicantly store water.
*#
ROUTE RESERVOIR     NHYDout=["RES_RF"] ,NHYDin=["S_N7"] ,
                    RDT=[1](min),
                          TABLE of ( OUTFLOW-STORAGE ) values
                                      (cms) - (ha-m)
                          TABLE of ( OUTFLOW-STORAGE ) values
                                      (cms) - (ha-m)
                                    [   0.0 ,     0.0 ]
                                    [0.9051,    2.40]
                                    [2.907,     4.13]
                                    [9.744,     9.18]
                                    [20.304,   14.96]
                                    [34.167,  310.21]
                                    [74.993,  605.46]
                                    [104.876, 900.71]
                                    [140.56, 2892.00]
                                    [225.00, 3615.63]
                                    [   -1  ,  -1  ]  (max twenty pts)
                          NHYDovf=["      "] ,
*%-----------------|------------------------------------------------------------|
SAVE HYD            NHYD=["RES_RF"],  # OF PCYCLES=[-1],  ICASEsh=[-1]
                    HYD_FILENAME=["H_ResRF"]
                    HYD_COMMENT=["outflow of Richmond Fen"]
*%-----------------|------------------------------------------------------------|
*#
*# Sum of hydrographs from Node 7 routed to Node 6
*# Section 5
*#
ROUTE CHANNEL       NHYDout=["N6"] ,NHYDin=["RES_RF"] ,
                    RDT=[1](min),
                    CHLGTH=[3056](m),  CHSLOPE=[0.0818](%),
                                        FPSLOPE=[0.0818](%),
                    SECNUM=[1.0],       NSEG=[5]
                    ( SEGROUGH, SEGDIST (m))=
                      [0.025,-70.8
                      0.1,-23.9
                      -0.05,23.9
                      0.06,39.8
```

```
                      0.05,96.3] NSEG times
                    ( DISTANCE (m), ELEVATION (m))=
                                     [-100.8, 97.00]
                                     [-70.8, 96.50]
                                     [-52.0, 96.00]
                                     [-35.1, 95.50]
                                     [-30.6, 95.00]
                                     [-23.9, 94.54]
                                     [23.9, 94.54]
                                     [39.8, 95.00]
                                     [50.4, 95.50]
                                     [93.5, 96.00]
                                     [94.9, 96.50]
                                     [96.3, 97.00]
*%-----------------|-------------------------------------------------------------|
*#
*# Addition of Subwatershed 6 and Van Gaal Drain to Node 6
*#
ADD HYD             NHYDsum=["S_N6"], NHYDs to add=["N6"+"SW_6"+"VG_DR"]
*%-----------------|-------------------------------------------------------------|
*#
*# Sum of hydrographs from Node 6 routed to Node 5
*# Section 6
*#
ROUTE CHANNEL       NHYDout=["N5"] ,NHYDin=["S_N6"] ,
                    RDT=[1](min),
                    CHLGTH=[1852](m),  CHSLOPE=[0.0540](%),
                                        FPSLOPE=[0.0540](%),
                    SECNUM=[1.0],       NSEG=[3]
                    ( SEGROUGH, SEGDIST (m))=
                      [0.035,-131.59
                      -0.045,48.96
                      0.1,239.04] NSEG times
                    ( DISTANCE (m), ELEVATION (m))=
                                     [-686.30, 94.50]
                                     [-675.70, 94.00]
                                     [-492.52, 93.00]
                                     [-467.28, 94.00]
                                     [-131.59, 94.00]
                                     [-92.79, 92.50]
                                     [-18.06, 91.00]
                                     [18.06, 91.00]
                                     [43.47, 92.50]
                                     [48.96, 94.00]
                                     [177.43, 94.00]
                                     [239.04,94.50]
*%-----------------|-------------------------------------------------------------|
*#
*# Addition of Subwatershed 5 and Flowing Creek to Node 5
*#
ADD HYD             NHYDsum=["S_N5"], NHYDs to add=["N5"+"SW_5"+"FL_CK"]
*%-----------------|-------------------------------------------------------------|
*#
*# Sum of hydrographs from Node 5 routed to Node 5A
*# Section 7
*#
ROUTE CHANNEL       NHYDout=["N5A"] ,NHYDin=["S_N5"] ,
                    RDT=[1](min),
                    CHLGTH=[556](m),  CHSLOPE=[0.0900](%),
                                        FPSLOPE=[0.0900](%),
                    SECNUM=[1.0],       NSEG=[4]
                    ( SEGROUGH, SEGDIST (m))=
                      [0.04,-41.5
                      0.1,-14.0
                      -0.045,14.0
                      0.1,41.1] NSEG times
```

```
                    ( DISTANCE (m), ELEVATION (m))=
                                 [-275.8, 93.00]
                                 [-248.6, 92.50]
                                 [-237.0, 92.00]
                                 [-219.3, 91.50]
                                 [-202.1, 91.50]
                                 [-186.0, 92.00]
                                 [-129.2, 92.00]
                                 [-117.6, 91.50]
                                 [-100.6, 91.00]
                                 [-41.5, 91.00]
                                 [-20.0, 91.00]
                                 [-14.0, 90.54]
                                 [14.0, 90.54]
                                 [15.3, 91.00]
                                 [17.3, 91.50]
                                 [38.4, 92.00]
                                 [39.8, 92.50]
                                 [41.1, 93.00]
*%-----------------|-----------------------------------------------------------|
*#
*# Addition of Subwatershed 5A1 and Subwatershed 5A2 to Node 5A
*#
ADD HYD             NHYDsum=["S_N5A"], NHYDs to add=["N5A"+"SW_5A2"+"SW_5A1"]
*%-----------------|-----------------------------------------------------------|
*#
*# Sum of hydrographs from Node 5A routed to Node 4
*# Section 8
*#
ROUTE CHANNEL       NHYDout=["N4"] ,NHYDin=["S_N5A"] ,
                    RDT=[1](min),
                    CHLGTH=[4630](m),  CHSLOPE=[0.0432](%),
                                        FPSLOPE=[0.0432](%),
                    SECNUM=[1.0],       NSEG=[3]
                    ( SEGROUGH, SEGDIST (m))=
                      [0.05,-28.2
                      -0.035,28.2
                      0.05,173.1] NSEG times
                    ( DISTANCE (m), ELEVATION (m))=
                                 [-38.9, 92.00]
                                 [-35.8, 91.50]
                                 [-33.3, 91.00]
                                 [-28.2, 90.50]
                                 [-15.0, 87.48]
                                 [-5.0, 88.34]
                                 [5.0, 86.20]
                                 [15.0, 88.55]
                                 [28.2, 90.50]
                                 [29.7, 91.00]
                                 [46.5, 91.00]
                                 [127.8, 91.00]
                                 [148.7, 91.50]
                                 [173.1, 92.00]
*%-----------------|-----------------------------------------------------------|
*#
*# Addition of Subwatershed 4 and Leamy Creek to Node 4
*#
ADD HYD             NHYDsum=["S_N4"], NHYDs to add=["N4"+"SW_4"+"LM_CK"]
SAVE HYD            NHYD=["S_N4"],  # OF PCYCLES=[-1],  ICASEsh=[1]
                    HYD_COMMENT=["flow at S_N4"]
*%-----------------|-----------------------------------------------------------|
*#
*# Sum of hydrographs from Node 4 routed to Node 2
*# Section 9
*#
ROUTE CHANNEL       NHYDout=["N2"] ,NHYDin=["S_N4"] ,
```

```
                    RDT=[1](min),
                    CHLGTH=[1667](m),  CHSLOPE=[0.0600](%),
                                        FPSLOPE=[0.0600](%),
                    SECNUM=[1.0],       NSEG=[4]
                    ( SEGROUGH, SEGDIST (m))=
                      [0.1,-28.0
                      -0.04,28.4
                      0.06,31.7
                      0.04,80.2] NSEG times
                    ( DISTANCE (m), ELEVATION (m))=
                           [-36.3, 92.00]
                           [-32.6, 91.50]
                           [-30.2, 91.00]
                           [-28.0, 90.45]
                           [-15.0, 87.48]
                           [-5.0, 88.34]
                           [5.0, 86.20]
                           [15.0, 88.55]
                           [28.0, 90.45]
                           [28.4, 90.50]
                           [30.4, 91.00]
                           [31.7, 91.50]
                           [80.2, 92.00]
*%-----------------|------------------------------------------------------------|
*#
*# Addition of Subwatershed 2 with Monohan Drain and Smith Drain to Node 2
*#
ADD HYD             NHYDsum=["S_N2"], NHYDs to add=["N2"+"SW_2"+"SM_DR"+"MO_DR"]
*%-----------------|------------------------------------------------------------|
SAVE HYD            NHYD=["S_N2"],  # OF PCYCLES=[-1],  ICASEsh=[-1]
                    HYD_FILENAME=["H_SN2"]
                    HYD_COMMENT=["flow at S_N2 Jock River Gauge at Moodie Dr."]
*%-----------------|------------------------------------------------------------|
*#
*# Sum of hydrographs from Node 2 routed to Node 1
*# Section 10
*#
*#*******************************************************************************
*%READ HYD            NHYD=["S_N2"],
*%                   HYD_FILENAME=["H-S_N2"]
*%-----------------|------------------------------------------------------------|
*#
*# Hydrograph from Node 2 routed to Node 416
*# Channel X-Section obtained from RVCA Hydraulic Model - Station 9025
*#
ROUTE CHANNEL       NHYDout=["N_416"] ,NHYDin=["S_N2"] ,
                    RDT=[1](min),
                    CHLGTH=[2327](m),  CHSLOPE=[0.0498](%),
                                        FPSLOPE=[0.0498](%),
                    SECNUM=[1.0],       NSEG=[3]
                    ( SEGROUGH, SEGDIST (m))=
                      [0.075,-23.96
                      -0.055,23.96
                      0.075,157.38]  NSEG times
                    ( DISTANCE (m), ELEVATION (m))=
                    [-336.97,93.5]
                    [-318.85,93]
                    [-259,92.5]
                    [-133.18,92]
                    [-33.17,92]
                    [-27.21,92]
                    [-26.14,91.5]
                    [-24.99,91]
                    [-23.96,90.5]
                    [-14.33,88.26]
                    [-0.68,88.12]
```

```
                    [14.33,88.26]
                    [23.96,90.5]
                    [32.12,91]
                    [43.74,91.5]
                    [57.09,92]
                    [73.53,92.5]
                    [108.27,93]
                    [125.88,93.5]
                    [144.81,94]
                    [157.38,94.5]
*%-----------------|------------------------------------------------------------|
*#******************************************************************************
*#    Catchment SW-1a
*#    - Portion of RVCA catchment SW_1 outside of Reach 1 subwatershed
*#    - Undeveloped agricultural land
*#******************************************************************************
CONTINUOUS NASHYD   NHYD=["SW_1a"], DT=[1]min, AREA=[536.42](ha),
                    DWF=[0](cms), CN/C=[72],  IA=[4.67](mm),
                    N=[3], TP=[2.79]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|------------------------------------------------------------|
*   -JFSA 2021-02-25  "S-1-Okeefe" is a part of S-1 sub-catchment. It is moved to drain
before station 7245 on Jock River
CONTINUOUS STANDHYD NHYD=["S-1-Okeefe"], DT=[1](min), AREA=[44.93](ha), XIMP=[0.65],
TIMP=[0.65], DWF=[0](cms),
                    LOSS=[2], SCS curve number CN=[75], Pervious surfaces:
                    IAper=[4.67](mm), SLPP=[2.0](%),
                    LGP=[40](m), MNP=[0.25], SCP=[0](min), Impervious surfaces:
                    IAimp=[1.57](mm), SLPI=[0.75](%),
                    LGI=[547.296](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs),   END=-1
*%-----------------|------------------------------------------------------------|
*COMPUTE DUALHYD     NHYDin=["S-1-Okeefe"], CINLET=[4.796](cms), NINLET=[1],
*                    MajNHYD=["S-1-OkMJ"]
*                    MinNHYD=["S-1-OkMN"]
*                    TMJSTO=[9999999](cu-m)
*%-----------------|------------------------------------------------------------|
*ADD HYD             NHYDsum=["S-1-OkS"], NHYDs to add=["S-1-OkMJ"+"S-1-OkMN"]
*%-----------------|------------------------------------------------------------|
*ROUTE RESERVOIR     NHYDout=["S-1-OkSR"] ,NHYDin=["S-1-OkS"] ,
*                    RDT=[1](min),
*                          TABLE of ( OUTFLOW-STORAGE ) values
*                                      (cms) - (ha-m)
*                                    [ 0.0     , 0.0 ]
*                                    [ 0.5370, 1.7917 ]
*                                    [    -1  ,  -1    ]  (max twenty pts)
*                          NHYDovf=["S-1-OkSovf"]
*%-----------------|------------------------------------------------------------|
ADD HYD             NHYDsum=["SN_416"], NHYDs to add=["N_416"+"SW_1a"+"S-1-Okeefe"]
*%-----------------|------------------------------------------------------------|
SAVE HYD            NHYD=["SN_416"],   # OF PCYCLES=[-1],  ICASEsh=[1]
                    HYD_COMMENT=["Total Flows at Highway 416"]
*%-----------------|------------------------------------------------------------|
*#
*# Hydrograph from Node 416 routed to Node at Okeefe drain
*# Channel X-Section obtained from RVCA Hydraulic Model - Station 7245
```

```
*#
ROUTE CHANNEL       NHYDout=["N_OK"] ,NHYDin=["SN_416"] ,
                    RDT=[1](min),
                    CHLGTH=[497](m),  CHSLOPE=[0.3018](%),
                                        FPSLOPE=[0.3018](%),
                    SECNUM=[1.0],       NSEG=[3]
                    ( SEGROUGH, SEGDIST (m))=
                      [0.075,-19.40
                      -0.055,19.40
                      0.075,377.02] NSEG times
                    ( DISTANCE (m), ELEVATION (m))=
                    [-1061.41, 92.50]
                    [-945.91, 92.00]
                    [-783.64, 91.50]
                    [-136.74, 91.00]
                    [-86.04, 91.00]
                    [-20.86, 91.00]
                    [-20.18, 90.50]
                    [-19.40, 90.00]
                    [-11.68, 86.89]
                    [0.00, 86.10]
                    [12.09, 86.81]
                    [19.40, 90.00]
                    [34.68, 90.50]
                    [60.56, 91.00]
                    [170.14, 91.00]
                    [175.05, 90.50]
                    [180.29, 90.00]
                    [193.41, 90.00]
                    [195.98, 90.50]
                    [377.02, 92.50]
*%-----------------|------------------------------------------------------------|
*#******************************************************************************
*#    Catchment OKEEFE
*#    - To O'Keefe drain (north of the Jock)
*#    - Developed with assumed 43% imp.
*#    - 2020-12-01 add Okeefe model (Area 513.02 HA) instead of current Okeefe (Area 513.02 HA)
*#    - 2020-11-20 Okeefe detailed model was added as per the NOVATECH SWMHYMO model (Citi-Gate 2014).
*%-----------------|------------------------------------------------------------|
*POST DEVELOPMENT CONDITIONS
*%-----------------|------------------------------------------------------------|
*#******************************************************************************
CONTINUOUS NASHYD   NHYD=["O-1"], DT=[1]min, AREA=[63.72](ha),
                    DWF=[0](cms), CN/C=[61], IA=[6.2](mm), N=[3], TP=[.9]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|----------------------------------------------------------------------------------------------------|
*ROUTE FLOW THROUGH AREA 0-2
ROUTE CHANNEL       NHYDout=["O-1R"], NHYDin=["O-1"], RDT=[1](min),
                    CHLGTH=[960](m), CHSLOPE=[0.63](%), FPSLOPE=[0.63](%),
                    SECNUM=[1], NSEG=[3]
                    ( SEGROUGH, SEGDIST (m))=[0.06,4 -.043,6 0.06,10] NSEG times
                    ( DISTANCE (m), ELEVATION (m))=[0.00, 2.0]
                    [0.0, 2.0]
                    [4.0, 0.0]
                    [6.0, 0.0]
                    [10.0, 2.0]
```

```
*%-----------------|-----------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["O-2"], DT=[1]min, AREA=[28.61](ha),
                    DWF=[0](cms), CN/C=[57], IA=[5.2](mm), N=[3], TP=[1.1]hrs,
                   Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["O-4"], DT=[1]min, AREA=[46.94](ha),
                    DWF=[0](cms), CN/C=[49], IA=[9.2](mm), N=[3], TP=[0.9]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
*TOTAL EXTERNAL FLOW NORTH OF O'KEEFE CT. CROSSING
ADD HYD             NHYDsum=["OKF-N"], NHYDs to add=["O-1R"+"O-2"+"O-4"]
*%-----------------|-----------------------------------------------------------|
*ROUTE FLOW THROUGH AREA O-6
ROUTE CHANNEL       ROUTE CHANNEL NHYDout=["OKF-NR"], NHYDin=["OKF-N"], RDT=[1](min),
                    CHLGTH=[210](m), CHSLOPE=[.81](%), FPSLOPE=[.81](%),
                    SECNUM=[1], NSEG=[3]
                    ( SEGROUGH, SEGDIST (m))=[0.043,22.43 -0.043,25.07
                    0.043,45.54] NSEG times
                    ( DISTANCE (m), ELEVATION (m))=[0.00, 3.73]
                    (14.62, 1.56)
                    (18.41, 1.44)
                    (22.43, 0.00)
                    (25.07, 0.70)
                    (29.10, 1.79)
                    (33.73, 2.71)
                    (45.54, 3.58)
*%-----------------|-----------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["O-6"], DT=[1]min, AREA=[16.46](ha),
                    DWF=[0](cms), CN/C=[43], IA=[9.2](mm), N=[3], TP=[0.7]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["O-3"], DT=[1](min), AREA=[39.67](ha), XIMP=[0.15],
TIMP=[0.30], DWF=[0](cms),
                    LOSS=[2], SCS curve number CN=[50], Pervious surfaces:
                    IAper=[4.67](mm), SLPP=[0.32](%),
                    LGP=[440](m), MNP=[0.035], SCP=[0](min), Impervious surfaces:
                    IAimp=[1.57](mm), SLPI=[0.32](%),
                    LGI=[1880](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs),   END=-1
*%-----------------|-----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["O-5"], DT=[1](min), AREA=[60.63](ha), XIMP=[0.13],
TIMP=[0.26], DWF=[0](cms),
```

```
                      LOSS=[2], SCS curve number CN=[61],
                      Pervious surfaces: IAper=[4.67](mm), SLPP=[1.38](%),
                      LGP=[550](m), MNP=[0.035], SCP=[0](min), Impervious surfaces:
                      IAimp=[1.57](mm), SLPI=[1.38](%),
                      LGI=[1450](m), MNI=[0.013], SCI=[0](min),
                      Continuous simulation parameters:
                      IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                      SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                      InterEventTime=[12](hrs),   END=-1
*%-----------------|-------------------------------------------------------------|
*TOTAL EXTERNAL FLOWS WEST OF THE SITE AND NORTH OF O'KEEFE CRT
*%-----------------|-------------------------------------------------------------|
ADD HYD               NHYDsum=["PT1"], NHYDs to add=["OKF-NR"+"O-3"+"O-5"+"O-6"]
*%-----------------|-------------------------------------------------------------|
CONTINUOUS NASHYD     NHYD=["O-7"], DT=[1]min, AREA=[5.28](ha),
                      DWF=[0](cms), CN/C=[54], IA=[7.5](mm), N=[3], TP=[0.6]hrs,
                      Continuous simulation parameters:
                      IaRECper=[4](hrs),
                      SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                      InterEventTime=[12](hrs)
                      Baseflow simulation parameters:
                      BaseFlowOption=[1] ,
                      InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                      VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-------------------------------------------------------------|
*ANALYSIS POINT 1 - TOTAL FLOW NORTH OF FALLOWFIELD DR. AND O'KEEFE CRT.
ADD HYD               NHYDsum=["FF"], NHYDs to add=["PT1"+"O-7"]
*%-----------------|-------------------------------------------------------------|
*ROUTE FLOW through O'Keefe Drain 1
ROUTE CHANNEL         NHYDout=["DRAIN1"], NHYDin=["FF"], RDT=[1](min),
                      CHLGTH=[302]{m), CHSLOPE=[1.00](%), FPSLOPE=[1.00](%),
                      SECNUM=[1], NSEG=[3]
                      ( SEGROUGH, SEGDIST (m))=[0.07,13.45 -0.043,16.55 0.07,30.00] NSEG
                      times
                      ( DISTANCE (m), ELEVATION (m))=[0.00, 1.70]
                      (3.45, 0.60)
                      (13.45, 0.50)
                      (14.45, 0.00)
                      (15.55, 0.00)
                      (16.55, 0.50)
                      (26.55, 0.60)
                      (30.00, 1.70)
*%-----------------|-------------------------------------------------------------|
CONTINUOUS NASHYD     NHYD=["D1"], DT=[1]min, AREA=[1.17](ha),
                      DWF=[0](cms), CN/C=[84], IA=[9.0](mm), N=[3], TP=[0.28]hrs,
                      Continuous simulation parameters:
                      IaRECper=[4](hrs),
                      SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                      InterEventTime=[12](hrs)
                      Baseflow simulation parameters:
                      BaseFlowOption=[1] ,
                      InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                      VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-------------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["A1"], DT=[1]min, AREA=[2.50](ha), XIMP=[0.68], TIMP=[0.85],
DWF=[0](cms), LOSS=[1]:
                      Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                      F=[0.00](mm),
                      Pervious   areas: IAper=[4.67](mm), SLPP=[0.5](%), LGP=[50](m),
                      MNP=[0.250], SCP=[0](min),
                      Impervious areas: IAimp=[1.57](mm), SLPI=[0.5](%),
                      LGI=[223.607](m), MNI=[0.013], SCI=[0](min),
                      Continuous simulation parameters:
                      IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                      END=-1
*%-----------------|-------------------------------------------------------------|
```

```
ROUTE RESERVOIR     NHYDout=["A1-STR"], NHYDin=["A1"], RDT=[1](min),
                         TABLE of ( OUTFLOW-STORAGE ) values
                                   (cms) - (ha-m)
                                 [ 0.000 , 0.000 ]
                                 [ 0.035 , 0.038 ]
                                 [ 0.072 , 0.051 ]
                                 [ 0.100 , 0.059 ]
                                 [ 0.125 , 0.070 ]
                                 [ 0.160 , 0.074 ]
                                 [ 0.185 , 0.081 ]
                                 [ -1 , -1 ] (max twenty pts)
                                 NHYDovf=["A1-OVF"]
*%-----------------|-----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["ST-2"], DT=[1]min, AREA=[0.59](ha), XIMP=[0.46],
TIMP=[0.57], DWF=[0](cms), LOSS=[1]:
                    Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                    F=[0.00](mm),
                    Pervious   areas: IAper=[4.67](mm), SLPP=[0.5](%), LGP=[50](m),
                    MNP=[0.250], SCP=[0](min),
                    Impervious areas: IAimp=[1.57](mm), SLPI=[0.5](%),
                    LGI=[108.628](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                    END=-1
*%-----------------|-----------------------------------------------------------|
ROUTE RESERVOIR     NHYDout=["ST2STR"], NHYDin=["ST-2"], RDT=[1](min),
                         TABLE of ( OUTFLOW-STORAGE ) values
                                   (cms) - (ha-m)
                                 [ 0.000 , 0.0000 ]
                                 [ 0.052 , 0.0010 ]
                                 [ 0.053 , 0.0080 ]
                                 [ -1 , -1 ] (max twenty pts)
                                 NHYDovf=["ST2OVF"]
*%-----------------|-----------------------------------------------------------|
*%-----------------|-----------------------------------------------------------|
*TOTAL FLOW NORTH OF STRANDHERD DR. (EAST BRANCH) CROSSING
*%-----------------|-----------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["O-8"], DT=[1]min, AREA=[60.55](ha),
                    DWF=[0](cms), CN/C=[69], IA=[4.0](mm), N=[3], TP=[1.0]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
ROUTE PIPE          PTYPE=[2]rect, NHYDout=["O8PIPE"], RNUMBER=[1], PWIDTH=[1800](mm),
PHEIGHT=[1200](mm), PLNGTH=[335.1](m),
                    PROUGH=[0.013], PSLOPE=[0.001](m/m), NHYDin=["O-8"], RDT=[1](min)
*%-----------------|-----------------------------------------------------------|
*%-----------------|-----------------------------------------------------------|
ADD HYD             NHYDsum=["ST2-IN"], NHYDs to
add=["DRAIN1"+"D1"+"A1-STR"+"A1-OVF"+"ST2STR"+"ST2OVF"+"O8PIPE"]
*%-----------------|-----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["A7"], DT=[1]min, AREA=[3.51](ha), XIMP=[0.68], TIMP=[0.85],
DWF=[0](cms), LOSS=[1]:
                    Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                    F=[0.00](mm),
                    Pervious   areas: IAper=[4.67](mm), SLPP=[0.5](%), LGP=[50](m),
                    MNP=[0.250], SCP=[0](min),
                    Impervious areas: IAimp=[1.57](mm), SLPI=[0.5](%),
                    LGI=[264.953](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
```

```
                         END=-1
*%-----------------|-------------------------------------------------------------|
ROUTE RESERVOIR          NHYDout=["A7-STR"], NHYDin=["A7"], RDT=[1](min),
                              TABLE of ( OUTFLOW-STORAGE ) values
                                        (cms) - (ha-m)
                                      [ 0.000 , 0.000 ]
                                      [ 0.049 , 0.054 ]
                                      [ 0.102 , 0.072 ]
                                      [ 0.140 , 0.082 ]
                                      [ 0.175 , 0.099 ]
                                      [ 0.225 , 0.105 ]
                                      [ 0.260 , 0.114 ]
                                      [ -1 , -1 ] (max twenty pts)
                                      NHYDovf=["A7-OVF"]
*%-----------------|-------------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["ST-3"], DT=[1]min, AREA=[0.71](ha), XIMP=[0.46],
TIMP=[0.57], DWF=[0](cms), LOSS=[1]:
                         Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                         F=[0.00](mm),
                         Pervious   areas: IAper=[4.67](mm), SLPP=[0.5](%), LGP=[50](m),
                         MNP=[0.250], SCP=[0](min),
                         Impervious areas: IAimp=[1.57](mm), SLPI=[0.5](%),
                         LGI=[119.164](m), MNI=[0.013], SCI=[0](min),
                         Continuous simulation parameters:
                         IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                         END=-1
*%-----------------|-------------------------------------------------------------|
ROUTE RESERVOIR          NHYDout=["ST3STR"], NHYDin=["ST-3"], RDT=[1](min),
                              TABLE of ( OUTFLOW-STORAGE ) values
                                        (cms) - (ha-m)
                                      [ 0.000 , 0.0000 ]
                                      [ 0.063 , 0.0010 ]
                                      [ 0.064 , 0.0094 ]
                                      [ -1 , -1 ] (max twenty pts)
                                      NHYDovf=["ST3OVF"]
*%-----------------|-------------------------------------------------------------|
*ANALYSIS POINT 2 - TOTAL FLOW AT OUTLET OF STREET 2/3 INTERSECTION
*%-----------------|-------------------------------------------------------------|
ADD HYD                  NHYDsum=["PT2ST3"], NHYDs to
add=["ST2-IN"+"A7-STR"+"A7-OVF"+"ST3STR"+"ST3OVF"]
*%-----------------|-------------------------------------------------------------|
*ROUTE FLOW through O'Keefe Drain 2
ROUTE CHANNEL            NHYDout=["DRAIN2"], NHYDin=["PT2ST3"], RDT=[1](min),
                         CHLGTH=[592]{m), CHSLOPE=[.23](%), FPSLOPE=[.23](%),
                                             SECNUM=[1], NSEG=[3]
                         ( SEGROUGH, SEGDIST (m))=[0.07,12.60 -0.043,17.40 0.07,30.00] NSEG
                         times
                         ( DISTANCE (m), ELEVATION (m))=[0.00, 1.70]
                         (2.60, 0.95)
                         (12.60, 0.75)
                         (14.10, 0.00)
                         (15.90, 0.00)
                         (17.40, 0.75)
                         (27.40, 0.95)
                         (30.00, 1.70)
*%-----------------|-------------------------------------------------------------|
CONTINUOUS NASHYD        NHYD=["D2"], DT=[1]min, AREA=[2.28](ha), DWF=[0](cms), CN/C=[84],
IA=[9.0](mm),
                         N=[3], TP=[0.99]hrs,
                         Continuous simulation parameters:
                         IaRECper=[4](hrs),
                         SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                         InterEventTime=[12](hrs)
                         Baseflow simulation parameters:
                         BaseFlowOption=[1] ,
                         InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
```

```
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["A17"], DT=[1]min, AREA=[12.04](ha), XIMP=[0.68],
TIMP=[0.85], DWF=[0](cms), LOSS=[1]:
                    Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                    F=[0.00](mm),
                    Pervious   areas: IAper=[4.67](mm), SLPP=[0.5](%), LGP=[50](m),
                    MNP=[0.250], SCP=[0](min),
                    Impervious areas: IAimp=[1.57](mm), SLPI=[0.5](%),
                    LGI=[490.714](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                    END=-1
*%-----------------|-----------------------------------------------------------|
ROUTE RESERVOIR     NHYDout=["A17STR"], NHYDin=["A17"], RDT=[1](min),
                         TABLE of ( OUTFLOW-STORAGE ) values
                                   (cms) - (ha-m)
                                 [ 0.000 , 0.000 ]
                                 [ 0.169 , 0.185 ]
                                 [ 0.349 , 0.248 ]
                                 [ 0.482 , 0.283 ]
                                 [ 0.602 , 0.338 ]
                                 [ 0.771 , 0.359 ]
                                 [ 0.891 , 0.391 ]
                                 [ -1 , -1 ] (max twenty pts)
                                 NHYDovf=["A17OVF"]
*%-----------------|-----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["ST-4"], DT=[1]min, AREA=[0.35](ha), XIMP=[0.46],
TIMP=[0.57], DWF=[0](cms), LOSS=[1]:
                    Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                    F=[0.00](mm),
                    Pervious   areas: IAper=[4.67](mm), SLPP=[0.5](%), LGP=[50](m),
                    MNP=[0.250], SCP=[0](min),
                    Impervious areas: IAimp=[1.57](mm), SLPI=[0.5](%), LGI=[83.666](m),
                    MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                    END=-1
*%-----------------|-----------------------------------------------------------|
ROUTE RESERVOIR     NHYDout=["ST4STR"], NHYDin=["ST-4"], RDT=[1](min),
                         TABLE of ( OUTFLOW-STORAGE ) values
                                   (cms) - (ha-m)
                                 [ 0.000 , 0.0000 ]
                                 [ 0.031 , 0.0010 ]
                                 [ 0.032 , 0.0050 ]
                                 [ -1 , -1 ] (max twenty pts)
                                 NHYDovf=["ST4OVF"]
*%-----------------|-----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["A18"], DT=[1]min, AREA=[5.30](ha), XIMP=[0.68], TIMP=[0.85],
DWF=[0](cms), LOSS=[1]:
                    Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                    F=[0.00](mm),
                    Pervious   areas: IAper=[4.67](mm), SLPP=[0.5](%), LGP=[50](m),
                    MNP=[0.250], SCP=[0](min),
                    Impervious areas: IAimp=[1.57](mm), SLPI=[0.5](%),
                    LGI=[325.576](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                    END=-1
*%-----------------|-----------------------------------------------------------|
ROUTE RESERVOIR     NHYDout=["A18STR"], NHYDin=["A18"], RDT=[1](min),
                         TABLE of ( OUTFLOW-STORAGE ) values
                                   (cms) - (ha-m)
                                 [ 0.000 , 0.000 ]
                                 [ 0.074 , 0.082 ]
                                 [ 0.154 , 0.109 ]
```

```
                                 [ 0.212 , 0.125 ]
                                 [ 0.265 , 0.149 ]
                                 [ 0.339 , 0.158 ]
                                 [ 0.392 , 0.172 ]
                                 [ -1 , -1 ] (max twenty pts)
                                 NHYDovf=["A18OVF"]
*%-----------------|-------------------------------------------------------------|
*ANALYSIS POINT 3 - TOTAL FLOW AT OUTLET OF STREET 4
*%-----------------|-------------------------------------------------------------|
ADD HYD             NHYDsum=["PT3ST4"], NHYDs to
add=["DRAIN2"+"D2"+"A17STR"+"A17OVF"+"ST4STR"+"ST4OVF"+"A18STR"+"A18OVF"]
*%-----------------|-------------------------------------------------------------|
*ROUTE FLOW through O'Keefe Drain 3
ROUTE CHANNEL       NHYDout=["DRAIN3"], NHYDin=["PT3ST4"], RDT=[1](min),
                    CHLGTH=[525]{m), CHSLOPE=[.23](%), FPSLOPE=[.23](%),
                    SECNUM=[1], NSEG=[3]
                    ( SEGROUGH, SEGDIST (m))=[0.07,12.50 -0.043,17.50 0.07,30.00] NSEG
                    times
                    ( DISTANCE (m), ELEVATION (m))=[0.00, 1.70]
                    (2.50, 1.00)
                    (12.50, 0.80)
                    (14.10, 0.00)
                    (15.90, 0.00)
                    (17.50, 0.80)
                    (27.50, 1.00)
                    (30.00, 1.70)
*%-----------------|-------------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["D3"], DT=[1]min, AREA=[2.51](ha),
                    DWF=[0](cms), CN/C=[86], IA=[8.7](mm), N=[3], TP=[0.73]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-------------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["C1"], DT=[1]min, AREA=[3.41](ha), XIMP=[0.68], TIMP=[0.85],
DWF=[0](cms), LOSS=[1]:
                    Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                    F=[0.00](mm),
                    Pervious   areas: IAper=[4.67](mm), SLPP=[0.5](%), LGP=[50](m),
                    MNP=[0.250], SCP=[0](min),
                    Impervious areas: IAimp=[1.57](mm), SLPI=[0.5](%),
                    LGI=[261.151](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                    END=-1
*%-----------------|-------------------------------------------------------------|
ROUTE RESERVOIR     NHYDout=["C1-STR"], NHYDin=["C1"], RDT=[1](min),
                         TABLE of ( OUTFLOW-STORAGE ) values
                                   (cms) - (ha-m)
                                 [ 0.000 , 0.000 ]
                                 [ 0.048 , 0.052 ]
                                 [ 0.099 , 0.070 ]
                                 [ 0.136 , 0.080 ]
                                 [ 0.170 , 0.096 ]
                                 [ 0.218 , 0.102 ]
                                 [ 0.252 , 0.111 ]
                                 [ -1 , -1 ] (max twenty pts)
                                 NHYDovf=["C1-OVF"]
*%-----------------|-------------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["ST-5"], DT=[1]min, AREA=[0.45](ha), XIMP=[0.46],
TIMP=[0.57], DWF=[0](cms), LOSS=[1]:
                    Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
```

```
                     F=[0.00](mm),
                     Pervious   areas: IAper=[4.67](mm), SLPP=[0.5](%), LGP=[50](m),
                     MNP=[0.250], SCP=[0](min),
                     Impervious areas: IAimp=[1.57](mm), SLPI=[0.5](%), LGI=[94.868](m),
                     MNI=[0.013], SCI=[0](min),
                     Continuous simulation parameters:
                     IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                     END=-1
*%-----------------|-------------------------------------------------------------|
ROUTE RESERVOIR      NHYDout=["ST5STR"], NHYDin=["ST-5"], RDT=[1](min),
                          TABLE of ( OUTFLOW-STORAGE ) values
                                    (cms) - (ha-m)
                                  [ 0.000 , 0.0000 ]
                                  [ 0.040 , 0.0010 ]
                                  [ 0.041 , 0.0062 ]
                                  [ -1 , -1 ] (max twenty pts)
                                  NHYDovf=["ST5OVF"]
*%-----------------|-------------------------------------------------------------|
ADD HYD              NHYDsum=["ST5-E"], NHYDs to
add=["DRAIN3"+"D3"+"C1-STR"+"C1-OVF"+"ST5STR"+"ST5OVF"]
*%-----------------|-------------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["STRAND"], DT=[1](min), AREA=[7.59](ha),
                     XIMP=[0.64], TIMP=[0.85], DWF=[0](cms), LOSS=[1]:
                     Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                     F=[0.00](mm),
                     Pervious   areas: IAper=[4.67](mm), SLPP=[0.5](%), LGP=[40](m),
                     MNP=[0.250], SCP=[0](min),
                     Impervious areas: IAimp=[1.57](mm), SLPI=[0.5](%), LGI=[1230](m),
                     MNI=[0.013], SCI=[0](min),
                     Continuous simulation parameters:
                     IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                     END=-1
*%-----------------|-------------------------------------------------------------|
ROUTE RESERVOIR      NHYDout=["S-POND"], NHYDin=["STRAND"], RDT=[1](min),
                          TABLE of ( OUTFLOW-STORAGE ) values
                                    (cms) - (ha-m)
                                  [ 0.000 , 0.000 ]
                                  [ 0.033 , 0.188 ]
                                  [ 0.057 , 0.253 ]
                                  [ 0.104 , 0.287 ]
                                  [ 0.160 , 0.336 ]
                                  [ 0.340 , 0.346 ]
                                  [ 0.471 , 0.360 ]
                                  [ 0.824 , 0.390 ]
                                  [ -1 , -1 ] (max twenty pts)
                                  NHYDovf=["S-OVF"]
*%-----------------|-------------------------------------------------------------|
ADD HYD              NHYDsum=["SSAOUT"], NHYDs to add=["ST5-E"+"S-POND"+"S-OVF"]
*%-----------------|-------------------------------------------------------------|
SAVE HYD             NHYD=["SSAOUT"], # OF PCYCLES=[5], ICASEsh=[1]
                     HYD_COMMENT=["SSAOUT"]
*%-----------------|-------------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["Area-A"], DT=[1]min, AREA=[66.75](ha), XIMP=[0.64],
TIMP=[0.80], DWF=[0](cms), LOSS=[1]:
                     Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                     F=[0.00](mm),
                     Pervious   areas: IAper=[4.67](mm), SLPP=[0.5](%), LGP=[50](m),
                     MNP=[0.250], SCP=[0](min),
                     Impervious areas: IAimp=[1.57](mm), SLPI=[0.5](%),
                     LGI=[1155.422](m), MNI=[0.013], SCI=[0](min),
                     Continuous simulation parameters:
                     IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                     END=-1
*%-----------------|-------------------------------------------------------------|
SAVE HYD             NHYD=["Area-A"], # OF PCYCLES=[1], ICASEsh=[1]
                     HYD_COMMENT=["SMWF-A Inflow"]
```

```
*%-----------------|-----------------------------------------------------------|
ROUTE RESERVOIR     NHYDout=["SWMF-A"], NHYDin=["Area-A"], RDT=[1](min),
                         TABLE of ( OUTFLOW-STORAGE ) values
                                   (cms) - (ha-m)
                                 [ 0.000 , 0.000 ]
                                 [ 0.103 , 1.077 ]
                                 [ 0.128 , 1.749 ]
                                 [ 0.382 , 2.282 ]
                                 [ 0.703 , 2.582 ]
                                 [ 1.256 , 2.978 ]
                                 [ 1.567 , 3.202 ]
                                 [ 1.955 , 3.493 ]
                                 [ 2.100 , 3.600 ]
                                 [ -1 , -1 ] (max twenty pts)
                                 NHYDovf=["SWMAOV"]
*%-----------------|-----------------------------------------------------------|
SAVE HYD            NHYD=["SWMF-A"], # OF PCYCLES=[1], ICASEsh=[1]
                    HYD_COMMENT=["SMWF-A Outflow"]
*%-----------------|-----------------------------------------------------------|
*ANALYSIS POINT 4 - TOTAL FLOW AT OUTLET OF STREET 5
*%-----------------|-----------------------------------------------------------|
ADD HYD             NHYDsum=["PT4ST5"], NHYDs to add=["SSAOUT"+"SWMF-A"+"SWMAOV"]
*%-----------------|-----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["C6"], DT=[1]min, AREA=[1.87](ha), XIMP=[0.68], TIMP=[0.85],
DWF=[0](cms), LOSS=[1]:
                    Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                    F=[0.00](mm),
                    Pervious   areas: IAper=[4.67](mm), SLPP=[0.5](%), LGP=[50](m),
                    MNP=[0.250], SCP=[0](min),
                    Impervious areas: IAimp=[1.57](mm), SLPI=[0.5](%),
                    LGI=[193.391](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                    END=-1
*%-----------------|-----------------------------------------------------------|
ROUTE RESERVOIR     NHYDout=["C6-STR"], NHYDin=["C6"], RDT=[1](min),
                         TABLE of ( OUTFLOW-STORAGE ) values
                                   (cms) - (ha-m)
                                 [ 0.000 , 0.000 ]
                                 [ 0.026 , 0.029 ]
                                 [ 0.054 , 0.038 ]
                                 [ 0.075 , 0.044 ]
                                 [ 0.093 , 0.052 ]
                                 [ 0.120 , 0.056 ]
                                 [ 0.138 , 0.061 ]
                                 [ -1 , -1 ] (max twenty pts)
                                 NHYDovf=["C6-OVF"]
*%-----------------|-----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["C7"], DT=[1]min, AREA=[1.62](ha), XIMP=[0.68], TIMP=[0.85],
DWF=[0](cms), LOSS=[1]:
                    Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                    F=[0.00](mm),
                    Pervious   areas: IAper=[4.67](mm), SLPP=[0.5](%), LGP=[50](m),
                    MNP=[0.250], SCP=[0](min),
                    Impervious areas: IAimp=[1.57](mm), SLPI=[0.5](%),
                    LGI=[180.000](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                    END=-1
*%-----------------|-----------------------------------------------------------|
ROUTE RESERVOIR     NHYDout=["C7-STR"], NHYDin=["C7"], RDT=[1](min),
                         TABLE of ( OUTFLOW-STORAGE ) values
                                   (cms) - (ha-m)
                                 [ 0.000 , 0.000 ]
                                 [ 0.023 , 0.025 ]
                                 [ 0.047 , 0.033 ]
```

```
                                [ 0.065 , 0.038 ]
                                [ 0.081 , 0.045 ]
                                [ 0.104 , 0.048 ]
                                [ 0.120 , 0.053 ]
                                [ -1 , -1 ] (max twenty pts)
                                NHYDovf=["C7-OVF"]
*%-----------------|-----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["ST-6"], DT=[1]min, AREA=[0.41](ha),XIMP=[0.46], TIMP=[0.57],
DWF=[0](cms), LOSS=[1]:
                   Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                   F=[0.00](mm),
                   Pervious   areas: IAper=[4.67](mm), SLPP=[0.5](%), LGP=[50](m),
                   MNP=[0.250], SCP=[0](min),
                   Impervious areas: IAimp=[1.57](mm), SLPI=[0.5](%), LGI=[90.554](m),
                   MNI=[0.013], SCI=[0](min),
                   Continuous simulation parameters:
                   IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                   END=-1
*%-----------------|-----------------------------------------------------------|
ROUTE RESERVOIR    NHYDout=["ST6STR"], NHYDin=["ST-6"], RDT=[1](min),
                        TABLE of ( OUTFLOW-STORAGE ) values
                                  (cms) - (ha-m)
                                [ 0.000 , 0.0000 ]
                                [ 0.036 , 0.0010 ]
                                [ 0.037 , 0.0058 ]
                                [ -1 , -1 ] (max twenty pts)
                                NHYDovf=["ST6OVF"]
*%-----------------|-----------------------------------------------------------|
*ANALYSIS POINT 5 - TOTAL FLOW AT OUTLET OF STREET 6
*%-----------------|-----------------------------------------------------------|
ADD HYD            NHYDsum=["PT5ST6"], NHYDs to
add=["PT4ST5"+"C6-STR"+"C6-OVF"+"C7-STR"+"C7-OVF"+"ST6STR"+"ST6OVF"]
*%-----------------|-----------------------------------------------------------|
*ROUTE FLOW through O'Keefe Drain 4
ROUTE CHANNEL      NHYDout=["DRAIN4"], NHYDin=["PT5ST6"], RDT=[1](min),
                   CHLGTH=[324]{m), CHSLOPE=[.10](%), FPSLOPE=[.10](%),
                   SECNUM=[1], NSEG=[3]
                   ( SEGROUGH, SEGDIST (m))=[0.07,12.00 -0.043,18.00 0.07,30.00] NSEG
                   times
                   ( DISTANCE (m), ELEVATION (m))=[0.00, 2.00]
                   (2.00, 1.20)
                   (12.00, 1.00)
                   (14.00, 0.00)
                   (16.00, 0.00)
                   (18.00, 1.00)
                   (28.00, 1.20)
                   (30.00, 2.00)
*%-----------------|-----------------------------------------------------------|
CONTINUOUS NASHYD  NHYD=["D4"], DT=[1]min, AREA=[1.73](ha), DWF=[0](cms), CN/C=[88],
IA=[8.4](mm),
                   N=[3], TP=[0.60]hrs,
                   Continuous simulation parameters:
                   IaRECper=[4](hrs),
                   SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                   InterEventTime=[12](hrs)
                   Baseflow simulation parameters:
                   BaseFlowOption=[1] ,
                   InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                   VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["Area-B"], DT=[1]min, AREA=[24.04](ha), XIMP=[0.62],
TIMP=[0.77], DWF=[0](cms), LOSS=[1]:
                   Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                   F=[0.00](mm),
                   Pervious   areas: IAper=[4.67](mm), SLPP=[1.4](%), LGP=[50](m),
                   MNP=[0.250], SCP=[0](min),
```

```
                    Impervious areas: IAimp=[1.57](mm), SLPI=[1.4](%),
                    LGI=[693.397](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                    END=-1
*%-----------------|------------------------------------------------------------|
ROUTE RESERVOIR     NHYDout=["SWMF-B"], NHYDin=["Area-B"], RDT=[1](min),
                         TABLE of ( OUTFLOW-STORAGE ) values
                                   (cms) - (ha-m)
                                 [ 0.000 , 0.000 ]
                                 [ 0.025 , 0.090 ]
                                 [ 0.175 , 0.510 ]
                                 [ 0.350 , 0.710 ]
                                 [ 0.495 , 0.820 ]
                                 [ 0.648 , 0.980 ]
                                 [ 0.965 , 1.045 ]
                                 [ 1.072 , 1.140 ]
                                 [ -1 , -1 ] (max twenty pts)
                                 NHYDovf=["SWMBOVF"]
*%-----------------|------------------------------------------------------------|
ADD HYD             NHYDsum=["D4-EX"], NHYDs to add=["DRAIN4"+"D4"+"SWMF-B"+"SWMBOVF"]
*%-----------------|------------------------------------------------------------|
*ROUTE FLOW THROUGH O'Keefe Drain 5
* JFSA: Nov. 2020, added en points to close X-Section
ROUTE CHANNEL       NHYDout=["DRAIN5"], NHYDin=["D4-EX"], RDT=[1](min),
                    CHLGTH=[413.0](m), CHSLOPE=[0.16](%), FPSLOPE=[0.16](%),
                    SECNUM=[1], NSEG=[3]
                    ( SEGROUGH, SEGDIST (m))=[0.043,12.29 -0.033,17.97
                    0.043,32.84] NSEG times
                    ( DISTANCE (m), ELEVATION (m))=(-0.01, 2.50)
                    [0.00, 1.41]
                    [6.13, 0.97]
                    [12.29, 0.89]
                    [15.71, 0.00]
                    [17.97, 0.39]
                    [23.04, 0.35]
                    [32.83, 0.96]
                    (32.84, 2.50)
*%-----------------|------------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["D5"], DT=[1]min, AREA=[1.90](ha),
                    DWF=[0](cms), CN/C=[86], IA=[8.7](mm), N=[3], TP=[0.69]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|------------------------------------------------------------|
*EXTERNAL FLOWS SOUTHEAST OF THE SITE NORTH OF McKENNA CASEY DR.
CONTINUOUS NASHYD   NHYD=["O-13SDF"], DT=[1]min, AREA=[9.74](ha),
                    DWF=[0](cms), CN/C=[81], IA=[4.0](mm), N=[3], TP=[.43]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|------------------------------------------------------------|
*SNOW DISPOSAL FACILITY
*PARAMETERS BASED ON ROBINSON 2006 MODEL
ROUTE RESERVOIR     NHYDout=["SDF"], NHYDin=["O-13SDF"], RDT=[1](min),
                         TABLE of ( OUTFLOW-STORAGE ) values
```

```
                                    (cms) - (ha-m)
                                  [0.000,0.000]
                                  [0.150,0.600]
                                  (0.200,1.500)
                                  [ -1 , -1 ] (max twenty pts)
                                  NHYDovf=["OVFSDF"]
*%-----------------|-----------------------------------------------------------|
*ANALYSIS POINT 6 - McKenna Casey Dr.
*%-----------------|-----------------------------------------------------------|
ADD HYD              NHYDsum=["PT6MC"], NHYDs to add=["DRAIN5"+"D5"+"SDF"]
*%-----------------|-----------------------------------------------------------|
CONTINUOUS NASHYD    NHYD=["O-15"], DT=[1]min, AREA=[10.67](ha),
                     DWF=[0](cms), CN/C=[82], IA=[7.5](mm), N=[3], TP=[0.30]hrs,
                     Continuous simulation parameters:
                     IaRECper=[4](hrs),
                     SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                     InterEventTime=[12](hrs)
                     Baseflow simulation parameters:
                     BaseFlowOption=[1] ,
                     InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                     VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
*TOTAL FLOW NORTH OF McKENNA CASEY DR.
ADD HYD              NHYDsum=["M-C"], NHYDs to add=["PT6MC"+"O-15"]
*%-----------------|-----------------------------------------------------------|
*ROUTE FLOW THROUGH AREA O-14
* JFSA: Nov. 2020, added end points to close X-section
ROUTE CHANNEL        NHYDout=["O-14Ch"], NHYDin=["M-C"], RDT=[1](min),
                     CHLGTH=[845.3](m), CHSLOPE=[0.10](%), FPSLOPE=[0.10](%),
                     SECNUM=[1], NSEG=[3]
                     ( SEGROUGH, SEGDIST (m))=[0.06,15.00 -0.033,18.04 0.06,31.85] NSEG
                     times
                     ( DISTANCE (m), ELEVATION (m))=[-0.01, 2.5
                     (0.00, 1.53]
                     (5.56, 1.47)
                     (9.21, 1.45)
                     (12.45, 1.53)
                     (13.70, 1.50)
                     (15.00, 0.69)
                     (15.34, 0.00)
                     (16.51, 0.05)
                     (17.30, 0.17)
                     (18.04, 0.74)
                     (19.29, 1.32)
                     (22.73, 1.47)
                     (31.84, 1.41)
                     (31.85, 2.50)
*%-----------------|-----------------------------------------------------------|
*%    -Change O-14 from NASHYD to STANDHYD, name it "S-1-Okeefe" and add it to S-1
subcatchment based on Project 1474-BCDC, JFSA, Nov. 2020
*%    -JFSA 2021-02-16, add detailed subcatchment drainage area for each subcatchment
in Corrigan sub-catchment. After adding part of  O-14 to S_1 sub-catchment so O-14
becomes 5 ha instead of 30.02 ha and TP becomes 0.133 (5*0.8/30.02) instead of 0.8
CONTINUOUS NASHYD    NHYD=["O-14"], DT=[1]min, AREA=[5](ha),
                     DWF=[0](cms), CN/C=[82], IA=[7.5](mm), N=[3], TP=[0.133]hrs,
                     Continuous simulation parameters:
                     IaRECper=[4](hrs),
                     SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                     InterEventTime=[12](hrs)
                     Baseflow simulation parameters:
                     BaseFlowOption=[1] ,
                     InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                     VHydCond=[0.055](mm/hr),   END=-1
*
*%-----------------|-----------------------------------------------------------|
*ANALYSIS POINT 7 - JOCK RIVER
```

```
* 2020-12-01 To Foster Drain
* 2020-12-01  replace ("PT7JR") by ("OKEEFE")
*%-----------------|-----------------------------------------------------------|
ADD HYD             NHYDsum=["OKEEFE"], NHYDs to add=["O-14Ch"+"O-14"]
*%-----------------|-----------------------------------------------------------|
*CONTINUOUS STANDHYD NHYD=["OKEEFE"], DT=[1](min), AREA=[448](ha),
*                    XIMP=[0.65], TIMP=[0.65], DWF=[0](cms), LOSS=[2],
*                    SCS curve number CN=[77],
*                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[0.5](%),
*                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
*                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[0.5](%),
*                            LGI=[1728](m), MNI=[0.013], SCI=[0](min),
*                    Continuous simulation parameters:
*                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
*                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                    InterEventTime=[18](hrs),   END=-1
*#******************************************************************************
*#    Okeefe Pond
*#    - Rating curve obtained assuming 40m3/ha in 24 hours for quality control
*#      and a ratio of the catchment area to the West Clarke pond rating curve
*#      from the MSS for the next coordinates
*#******************************************************************************
*ROUTE RESERVOIR     NHYDout=["P_OKE"], NHYDin=["OKEEFE"],
*                    RDT=[1](min),
*                         TABLE of ( OUTFLOW-STORAGE ) values
*                                   (cms) - (ha-m)
*                                 [   0.0  ,  0.0]
*                                 [  14.13 , 13.0]
*                                 [   -1  ,  -1  ]  (maximum one hundred pairs of points)
*                                 NHYDovf=["ok-OVF"],
*%-----------------|---------------------------------------------------------------------------------------------|
*   -JFSA 2021-02-25  "S-1-D2" and "S-1-D3" are part of S-1 sub-catchment. They are moved to drain before station 6215 on Jock River
CONTINUOUS STANDHYD NHYD=["S-1-D2"], DT=[1](min), AREA=[18.67](ha), XIMP=[0.65], TIMP=[0.65], DWF=[0](cms),
                    LOSS=[2], SCS curve number CN=[75], Pervious surfaces: IAper=[4.67](mm), SLPP=[2.0](%),
                    LGP=[40](m), MNP=[0.25], SCP=[0](min), Impervious surfaces: IAimp=[1.57](mm), SLPI=[0.75](%),
                    LGI=[352.798](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs),   END=-1
*%-----------------|-----------------------------------------------------------|
*CONTINUOUS NASHYD   NHYD=["S-1-D2"], DT=[1]min, AREA=[18.67](ha),
*                    DWF=[0](cms), CN/C=[77],  IA=[4.67](mm),
*                    N=[3], TP=[1.120]hrs,
*                    Continuous simulation parameters:
*                    IaRECper=[4](hrs),
*                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                    InterEventTime=[12](hrs)
*                    Baseflow simulation parameters:
*                    BaseFlowOption=[1] ,
*                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
*                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
*COMPUTE DUALHYD     NHYDin=["S-1-D2"], CINLET=[2.062](cms), NINLET=[1],
*                    MajNHYD=["S-1-D2J"]
*                    MinNHYD=["S-1-D2N"]
*                    TMJSTO=[9999999](cu-m)
*%-----------------|-----------------------------------------------------------|
*ADD HYD             NHYDsum=["S-1-D2S"], NHYDs to add=["S-1-D2J"+"S-1-D2N"]
*%-----------------|-----------------------------------------------------------|
*ROUTE RESERVOIR     NHYDout=["S-1-D2R"] ,NHYDin=["S-1-D2S"] ,
```

```
*                     RDT=[1](min),
*                           TABLE of ( OUTFLOW-STORAGE ) values
*                                       (cms) - (ha-m)
*                                     [ 0.0     , 0.0 ]
*                                     [ 0.2231, 0.7445 ]
*                                     [    -1  ,  -1    ]  (max twenty pts)
*                           NHYDovf=["S-1-D2Rovf"]
*%-----------------|-----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["S-1-D3"], DT=[1](min), AREA=[6.79](ha), XIMP=[0.65],
TIMP=[0.65], DWF=[0](cms),
                    LOSS=[2], SCS curve number CN=[75], Pervious surfaces:
                    IAper=[4.67](mm), SLPP=[2.0](%),
                    LGP=[40](m), MNP=[0.25], SCP=[0](min), Impervious surfaces:
                    IAimp=[1.57](mm), SLPI=[0.75](%),
                    LGI=[212.760](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs),   END=-1
*%-----------------|-----------------------------------------------------------|
*CONTINUOUS NASHYD   NHYD=["S-1-D3"], DT=[1]min, AREA=[6.79](ha),
*                    DWF=[0](cms), CN/C=[77],  IA=[4.67](mm),
*                    N=[3], TP=[1.281]hrs,
*                    Continuous simulation parameters:
*                    IaRECper=[4](hrs),
*                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                    InterEventTime=[12](hrs)
*                    Baseflow simulation parameters:
*                    BaseFlowOption=[1] ,
*                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
*                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
*COMPUTE DUALHYD     NHYDin=["S-1-D3"], CINLET=[0.719](cms), NINLET=[1],
*                    MajNHYD=["S-1-D3J"]
*                    MinNHYD=["S-1-D3N"]
*                    TMJSTO=[9999999](cu-m)
*%-----------------|-----------------------------------------------------------|
*ADD HYD             NHYDsum=["S-1-D3S"], NHYDs to add=["S-1-D3J"+"S-1-D3N"]
*%-----------------|-----------------------------------------------------------|
*ROUTE RESERVOIR     NHYDout=["S-1-D3R"] ,NHYDin=["S-1-D3S"] ,
*                    RDT=[1](min),
*                          TABLE of ( OUTFLOW-STORAGE ) values
*                                      (cms) - (ha-m)
*                                    [ 0.0     , 0.0 ]
*                                    [ 0.0811, 0.2708 ]
*                                    [    -1  ,  -1    ]  (max twenty pts)
*                          NHYDovf=["S-1-D3Rovf"]
*%-----------------|-----------------------------------------------------------|
ADD HYD             NHYDsum=["SN_OK"], NHYDs to add=["N_OK"+"OKEEFE"+"S-1-D2"+"S-1-D3"]
*%-----------------|-----------------------------------------------------------|
SAVE HYD            NHYD=["SN_OK"],   # OF PCYCLES=[-1],  ICASEsh=[1]
                    HYD_COMMENT=["Total Flows at Okeefe Drain"]
*%-----------------|-----------------------------------------------------------|
*#
*# Hydrograph from Node Okeefe routed to Node at Foster Drain
*# Channel X-Section obtained from RVCA Hydraulic Model - Station 6215
*#
ROUTE CHANNEL       NHYDout=["N_FO"] ,NHYDin=["SN_OK"] ,
                    RDT=[1](min),
                    CHLGTH=[1183](m),  CHSLOPE=[0.0761](%),
                                        FPSLOPE=[0.0761](%),
                    SECNUM=[1.0],       NSEG=[3]
                    ( SEGROUGH, SEGDIST (m))=
                      [0.050,-33.89
                      -0.035,31.59
                      0.050,34.41] NSEG times
```

```
                    ( DISTANCE (m), ELEVATION (m))=
                    [-794.18, 91.00]
                    [-775.41, 91.50]
                    [-702.63, 91.50]
                    [-546.19, 91.50]
                    [-529.54, 91.50]
                    [-323.44, 91.00]
                    [-320.71, 91.00]
                    [-183.59, 91.00]
                    [-182.54, 90.50]
                    [-181.36, 90.00]
                    [-177.37, 90.00]
                    [-87.70, 90.00]
                    [-33.89, 90.00]
                    [-18.52, 86.88]
                    [0.00,85.20]
                    [16.20, 86.83]
                    [31.59, 90.00]
                    [33.03, 90.50]
                    [34.41, 91.00]
*%-----------------|------------------------------------------------------------|
*#*****************************************************************************
*#    Catchment FOSTER
*#    - To Foster ditch (north of the Jock)
*#    - Partially developed (medium density); remaining agricultural
*#    - 2020-12-01 JFSA Foster area is 332 as per Foster SWMF Environmental Study
Report, CH2MHILL, Aug 2013.
*#    - 2020-12-01 decrease Foster drainage area from (373 HA) to (307.98 HA) after
increasing Okeefe drainage area to (513.02 HA) so the total drainage area remains the
same
*#    - 2021-02-12  update Foster area to 325.44 ha as measured from QGIS
*#*****************************************************************************
CONTINUOUS STANDHYD NHYD=["FOSTER"], DT=[1]min, AREA=[325.44](ha),
                    XIMP=[0.55], TIMP=[0.55], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[74],
                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[0.5](%),
                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[0.5](%),
                            LGI=[1472.956](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[18](hrs),   END=-1
*#*****************************************************************************
*#    Foster Pond
*#    - Rating curve obtained assuming 40m3/ha in 24 hours for quality control
*#      and a ratio of the catchment area to the West Clarke pond rating curve
*#      from the MSS for the next coordinates
*#*****************************************************************************
ROUTE RESERVOIR     NHYDout=["P_FOS"],  NHYDin=["FOSTER"],
                    RDT=[1](min),
                          TABLE of ( OUTFLOW-STORAGE ) values
                                      (cms) - (ha-m)
                                    [   0.0 ,  0.0 ]
                                    [   10.34 , 10]
                                    [   -1  ,  -1  ]  (max twenty pts)
                          NHYDovf=["FO-OVF"]
*%-----------------|------------------------------------------------------------|
ADD HYD             NHYDsum=["FOSTER-OUT"], NHYDs to add=["P_FOS"+"FO-OVF"]
*%-----------------|------------------------------------------------------------|
*#*****************************************************************************
*    -Brazeau area from P 1800-19 =[71.751], change to 63.59 ha based on GIS measurements
*     -JFSA, 2021-01-19  update "W_CLAR_BRAZ" to 73.29 ha based on GIS measurements
*     -JFSA, 2021-01-22  Brazeau ("MS_P10"+"P10-OVF")brazeau pond discharges directly
to the jock river through a road side ditch on the west side of Borrisokane road
(station 6016)
```

```
CONTINUOUS STANDHYD NHYD=["W_CLAR_BRAZ"], DT=[1]min, AREA=[73.29](ha),
                    XIMP=[0.6], TIMP=[0.65], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[77],
                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[0.5](%),
                            LGI=[699.00](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[18](hrs),   END=-1
*%-----------------|-----------------------------------------------------------|
* 2020-12-01 correct pond curve values
ROUTE RESERVOIR     NHYDout=["MS_P10"],  NHYDin=["W_CLAR_BRAZ"],
                    RDT=[1](min),
                          TABLE of ( OUTFLOW-STORAGE ) values
                                      (cms) - (ha-m)
                                    [   0.0 ,  0.0 ]
                                    [ 0.068 , 0.001 ]
                                    [ 0.271 , 0.022 ]
                                    [ 0.379 , 0.051 ]
                                    [ 0.48 , 0.091 ]
                                    [ 0.853 , 0.341 ]
                                    [ 1.005 , 0.61 ]
                                    [ 1.128 , 1.231 ]
                                    [ 1.155 , 1.592 ]
                                    [ 1.194 , 1.876 ]
                                    [ 1.2 , 1.921 ]
                                    [ 1.259 , 2.369 ]
                                    [ 1.3 , 2.665 ]
                                    [ 1.349 , 2.813 ]
                                    [   -1  ,  -1  ]  (max twenty pts)
                          NHYDovf=["P10-OVF"]
*%-----------------|-----------------------------------------------------------|
*   -JFSA 2021-02-26  "S-1-FO-D2" is a part of S-1 sub-catchment. It is moved to drain
before station 980 on Foster Drain
CONTINUOUS STANDHYD NHYD=["S-1-FO-D2"], DT=[1]min, AREA=[4.94](ha),
                    XIMP=[0.55], TIMP=[0.55], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[74],
                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[0.5](%),
                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[0.5](%),
                            LGI=[181.475](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[18](hrs),   END=-1
*%-----------------|-----------------------------------------------------------|
*CONTINUOUS NASHYD   NHYD=["S-1-FO-D2"], DT=[1]min, AREA=[4.94](ha),
*                    DWF=[0](cms), CN/C=[77],  IA=[4.67](mm),
*                    N=[3], TP=[1.10]hrs,
*                    Continuous simulation parameters:
*                    IaRECper=[4](hrs),
*                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                    InterEventTime=[12](hrs)
*                    Baseflow simulation parameters:
*                    BaseFlowOption=[1] ,
*                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
*                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
*COMPUTE DUALHYD     NHYDin=["S-1-FO-D2"], CINLET=[0.508](cms), NINLET=[1],
*                    MajNHYD=["S-1-FO-D2J"]
*                    MinNHYD=["S-1-FO-D2N"]
*                    TMJSTO=[9999999](cu-m)
*%-----------------|-----------------------------------------------------------|
*ADD HYD             NHYDsum=["S-1-FO-D2S"], NHYDs to add=["S-1-FO-D2J"+"S-1-FO-D2N"]
```

```
*%-----------------|---------------------------------------------------------|
*ROUTE RESERVOIR     NHYDout=["S-1-FO-D2R"] ,NHYDin=["S-1-FO-D2S"] ,
*                    RDT=[1](min),
*                          TABLE of ( OUTFLOW-STORAGE ) values
*                                      (cms) - (ha-m)
*                                    [ 0.0     , 0.0 ]
*                                    [ 0.0590, 0.1970 ]
*                                    [    -1  ,  -1    ]  (max twenty pts)
*                          NHYDovf=["S-1FOD2ovf"]
*%-----------------|---------------------------------------------------------|
ADD HYD             NHYDsum=["980"], NHYDs to add=["FOSTER-OUT"+"S-1-FO-D2"]
*%-----------------|---------------------------------------------------------|
SAVE HYD            NHYD=["980"],   # OF PCYCLES=[-1],  ICASEsh=[1]
                    HYD_COMMENT=["Total Flows at Station 980 on Foster Drain"]
*%-----------------|---------------------------------------------------------|
*#
*# Hydrograph from Node Foster SWM (Station 980)to Node at station 520
*# Channel X-Section obtained from RVCA Hydraulic Model - Station 980
*#
ROUTE CHANNEL       NHYDout=["980-out"] ,NHYDin=["980"] ,
                    RDT=[1](min),
                    CHLGTH=[460](m),  CHSLOPE=[0.04348](%),
                                        FPSLOPE=[0.04348](%),
                    SECNUM=[1.0],       NSEG=[3]
                    ( SEGROUGH, SEGDIST (m))=
                      [0.050,45.90
                      -0.035,53.30
                      0.050,100] NSEG times
                    ( DISTANCE (m), ELEVATION (m))=
                    [0, 91.75 ]
                    [42.4, 92.18 ]
                    [43.5, 92.16 ]
                    [44.1, 92.1 ]
                    [44.6, 92 ]
                    [44.8, 91.86 ]
                    [45.9, 91.04 ]
                    [46.4, 90.65 ]
                    [46.8, 90.36 ]
                    [47.9, 90.32 ]
                    [48.7, 90.35 ]
                    [50.7, 90.33 ]
                    [52.2, 90.38 ]
                    [52.5, 90.59 ]
                    [53.3, 91.28 ]
                    [54, 91.83 ]
                    [54.3, 92 ]
                    [54.8, 92.08 ]
                    [55.4, 92.12 ]
                    [100, 91.84 ]
*%-----------------|---------------------------------------------------------|
*   -JFSA 2021-02-26  "S-1-FO-D1" is a part of S-1 sub-catchment. It is moved to drain
before station 520 on Foster Drain
CONTINUOUS STANDHYD NHYD=["S-1-FO-D1"], DT=[1]min, AREA=[5.11](ha),
                    XIMP=[0.65], TIMP=[0.65], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[74],
                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[0.5](%),
                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[0.5](%),
                            LGI=[184.572](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[18](hrs),   END=-1
*%-----------------|---------------------------------------------------------|
*COMPUTE DUALHYD     NHYDin=["S-1-FO-D1"], CINLET=[0.605](cms), NINLET=[1],
*                    MajNHYD=["S-1-FO-D1J"]
```

```
*                        MinNHYD=["S-1-FO-D1N"]
*                        TMJSTO=[9999999](cu-m)
*%-----------------|-----------------------------------------------------------|
*ADD HYD                 NHYDsum=["S-1-FO-D1S"], NHYDs to add=["S-1-FO-D1N"+"S-1-FO-D1J"]
*%-----------------|-----------------------------------------------------------|
*ROUTE RESERVOIR         NHYDout=["S-1-FO-D1R"] ,NHYDin=["S-1-FO-D1S"] ,
*                        RDT=[1](min),
*                              TABLE of ( OUTFLOW-STORAGE ) values
*                                          (cms) - (ha-m)
*                                        [ 0.0     , 0.0 ]
*                                        [ 0.0611, 0.2038 ]
*                                        [    -1  ,  -1    ]  (max twenty pts)
*                              NHYDovf=["S-1FOD1ovf"]
*%-----------------|-----------------------------------------------------------|
ADD HYD                 NHYDsum=["520"], NHYDs to add=["980-out"+"S-1-FO-D1"]
*%-----------------|-----------------------------------------------------------|
SAVE HYD                NHYD=["520"],   # OF PCYCLES=[-1],  ICASEsh=[1]
                        HYD_COMMENT=["Total Flows at Sation 520 on Foster Drain"]
*%-----------------|-----------------------------------------------------------|
*# Hydrograph from Node at Station 520 (Foster Drain) to Node at station 6016 (Jock River)
*# Channel X-Section obtained from RVCA Hydraulic Model - Station 520
*#
ROUTE CHANNEL           NHYDout=["520-out"] ,NHYDin=["520"] ,
                        RDT=[1](min),
                        CHLGTH=[860](m),  CHSLOPE=[0.5872](%),
                                            FPSLOPE=[0.5872](%),
                        SECNUM=[1.0],       NSEG=[3]
                        ( SEGROUGH, SEGDIST (m))=
                          [0.050,45.90
                          -0.035,54.3
                          0.050,100.1097] NSEG times
                        ( DISTANCE (m), ELEVATION (m))=
                        [0, 91.26 ]
                        [44.9, 91.46 ]
                        [45.1, 91.37 ]
                        [45.9, 90.84 ]
                        [47, 90.32 ]
                        [47.5, 90.22 ]
                        [48, 90.17 ]
                        [50.7, 90.19 ]
                        [51.5, 90.17 ]
                        [52.2, 90.13 ]
                        [52.7, 90.12 ]
                        [53.3, 90.14 ]
                        [53.5, 90.31 ]
                        [53.9, 90.59 ]
                        [54.3, 90.87 ]
                        [54.7, 91.04 ]
                        [55.3, 91.24 ]
                        [55.5, 91.26 ]
                        [63.7, 91.37 ]
                        [100.1097, 91.43 ]
*%-----------------|-----------------------------------------------------------|
*   -JFSA 2021-02-26  "S-1-FO-F-D" is a part of S-1 sub-catchment. It is moved to drain before station 6016 on Jock River
CONTINUOUS STANDHYD NHYD=["S-1-FO-F-D"], DT=[1]min, AREA=[14.96](ha),
                        XIMP=[0.65], TIMP=[0.65], DWF=[0](cms), LOSS=[2],
                        SCS curve number CN=[74],
                        Pervious   surfaces: IAper=[4.67](mm), SLPP=[0.5](%),
                                LGP=[40](m), MNP=[0.25], SCP=[0](min),
                        Impervious surfaces: IAimp=[1.57](mm), SLPI=[0.5](%),
                                LGI=[315.806](m), MNI=[0.013], SCI=[0](min),
                        Continuous simulation parameters:
                        IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                        SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
```

```
                    InterEventTime=[18](hrs),   END=-1
*%-----------------|-----------------------------------------------------------|
*CONTINUOUS NASHYD   NHYD=["S-1-FO-F-D"], DT=[1]min, AREA=[14.96](ha),
*                    DWF=[0](cms), CN/C=[77],  IA=[4.67](mm),
*                    N=[3], TP=[1.007]hrs,
*                    Continuous simulation parameters:
*                    IaRECper=[4](hrs),
*                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                    InterEventTime=[12](hrs)
*                    Baseflow simulation parameters:
*                    BaseFlowOption=[1] ,
*                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
*                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
*COMPUTE DUALHYD     NHYDin=["S-1-FO-F-D"], CINLET=[1.749](cms), NINLET=[1],
*                    MajNHYD=["S-1FO-F-DJ"]
*                    MinNHYD=["S-1FO-F-DN"]
*                    TMJSTO=[9999999](cu-m)
*%-----------------|-----------------------------------------------------------|
*ADD HYD             NHYDsum=["S-1FO-F-DS"], NHYDs to add=["S-1FO-F-DJ"+"S-1FO-F-DN"]
*%-----------------|-----------------------------------------------------------|
*ROUTE RESERVOIR     NHYDout=["S-1FO-F-DR"] ,NHYDin=["S-1FO-F-DS"] ,
*                    RDT=[1](min),
*                          TABLE of ( OUTFLOW-STORAGE ) values
*                                      (cms) - (ha-m)
*                                    [ 0.0     , 0.0 ]
*                                    [ 0.1788, 0.5966 ]
*                                    [    -1  ,  -1    ]  (max twenty pts)
*                          NHYDovf=["S-1FoFDovf"]
*%-----------------|-----------------------------------------------------------|
*   -JFSA 2021-02-26  "S-1-D8" is a part of S-1 sub-catchment. It is moved to drain before station 6016 on Jock River
CONTINUOUS STANDHYD NHYD=["S-1-D8"], DT=[1]min, AREA=[5.27](ha), XIMP=[0.325], TIMP=[0.65], DWF=[0](cms), LOSS=[1]:
                    Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr), F=[0.00](mm),
                    Pervious   areas: IAper=[4.67](mm), SLPP=[2.0](%), LGP=[40](m), MNP=[0.250], SCP=[0](min),
                    Impervious areas: IAimp=[0.785](mm), SLPI=[0.75](%), LGI=[187.439](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs), END=-1
*%-----------------|-----------------------------------------------------------|
*CONTINUOUS NASHYD   NHYD=["S-1-D8"], DT=[1]min, AREA=[5.27](ha),
*                    DWF=[0](cms), CN/C=[77],  IA=[4.67](mm),
*                    N=[3], TP=[1.10]hrs,
*                    Continuous simulation parameters:
*                    IaRECper=[4](hrs),
*                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                    InterEventTime=[12](hrs)
*                    Baseflow simulation parameters:
*                    BaseFlowOption=[1] ,
*                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
*                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
*COMPUTE DUALHYD     NHYDin=["S-1-D8"], CINLET=[2.279](cms), NINLET=[1],
*                    MajNHYD=["S-1-D8J"]
*                    MinNHYD=["S-1-D8N"]
*                    TMJSTO=[9999999](cu-m)
*%-----------------|-----------------------------------------------------------|
*ADD HYD             NHYDsum=["S-1-D8S"], NHYDs to add=["S-1-D8J"+"S-1-D8N"]
*%-----------------|-----------------------------------------------------------|
*ADD HYD             NHYDsum=["S-1-D"], NHYDs to add=["S-1-Okeefe"+"S-1"+"S-1-Fost"]
*%-----------------|-----------------------------------------------------------|
*COMPUTE DUALHYD     NHYDin=["S-1-D"], CINLET=[11.616](cms), NINLET=[1],
```

```
*                     MajNHYD=["S-1-D-MJ"]
*                     MinNHYD=["S-1-D-MN"]
*                     TMJSTO=[5974](cu-m)
*%-----------------|-----------------------------------------------------------|
*ADD HYD              NHYDsum=["S-1-DEV"], NHYDs to add=["S-1-D-MJ"+"S-1-D-MN"]
*%-----------------|-----------------------------------------------------------|
*ROUTE RESERVOIR      NHYDout=["S-1-D8R"] ,NHYDin=["S-1-D8S"] ,
*                     RDT=[1](min),
*                           TABLE of ( OUTFLOW-STORAGE ) values
*                                       (cms) - (ha-m)
*                                     [ 0.0     , 0.0 ]
*                                     [ 0.0630, 0.2102 ]
*                                     [    -1  ,  -1    ]  (max twenty pts)
*                           NHYDovf=["S-1-D8Rovf"]
*%-----------------|-----------------------------------------------------------|
*   -JFSA 2021-02-26  "S-1-A" is a part of S-1 sub-catchment. It is moved to drain before station 6016 on Jock River
CONTINUOUS NASHYD    NHYD=["S-1-A"], DT=[1]min, AREA=[75.88](ha),
                     DWF=[0](cms), CN/C=[77],  IA=[4.67](mm),
                     N=[3], TP=[0.619]hrs,
                     Continuous simulation parameters:
                     IaRECper=[4](hrs),
                     SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                     InterEventTime=[12](hrs)
                     Baseflow simulation parameters:
                     BaseFlowOption=[1] ,
                     InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                     VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
*     -JFSA, 2021-01-22  "W_CLAR_UNDE" (west of Clarke sub-catchment) discharges directly to the jock river through a road side ditch on the west side of Borrisokane road (station 6016)
CONTINUOUS NASHYD    NHYD=["W_CLAR_UNDE"], DT=[1]min, AREA=[35.65](ha),
                     DWF=[0](cms), CN/C=[77],  IA=[4.67](mm),
                     N=[3], TP=[1.10]hrs,
                     Continuous simulation parameters:
                     IaRECper=[4](hrs),
                     SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                     InterEventTime=[12](hrs)
                     Baseflow simulation parameters:
                     BaseFlowOption=[1] ,
                     InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                     VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
ADD HYD              NHYDsum=["SN_FO"], NHYDs to add=["N_FO"+"520-out"+"MS_P10"+"P10-OVF"+"W_CLAR_UNDE"+"S-1-FO-F-D"+"S-1-D8"+"S-1-A"]
*%-----------------|-----------------------------------------------------------|
SAVE HYD             NHYD=["SN_FO"],   # OF PCYCLES=[-1],  ICASEsh=[1]
                     HYD_COMMENT=["Total Flows at Foster Drain"]
*%-----------------|-----------------------------------------------------------|
*# Hydrograph from Node Foster routed to Node at Cedarview Road
*# Channel X-Section obtained from RVCA Hydraulic Model - Station 6016
*#
ROUTE CHANNEL        NHYDout=["N_CE"] ,NHYDin=["SN_FO"] ,
                     RDT=[1](min),
                     CHLGTH=[159](m),  CHSLOPE=[0.0818](%),
                                       FPSLOPE=[0.0818](%),
                     SECNUM=[1.0],       NSEG=[3]
                     ( SEGROUGH, SEGDIST (m))=
                       [0.050,-15.46
                       -0.035,26.55
                       0.050,116.76] NSEG times
                     ( DISTANCE (m), ELEVATION (m))=
                     [-645.23, 91.50]
                     [-391.20, 91.50]
                     [-91.00, 91.50]
```

```
                    [-85.52, 91.50]
                    [-15.46, 89.40]
                    [-9.79, 89.31]
                    [-3.22, 86.24]
                    [3.22, 85.07]
                    [10.96, 85.79]
                    [16.44, 86.49]
                    [26.55, 89.45]
                    [29.03, 90.27]
                    [35.76, 90.67]
                    [36.67, 91.00]
                    [108.08, 91.00]
                    [109.82, 90.50]
                    [112.04, 90.50]
                    [114.62, 91.00]
                    [116.76, 91.50]
*%-----------------|-------------------------------------------------------------|
*#*****************************************************************************
*#    Catchment S-1
*#    - To Jock River (north and south of Jock)
*#    - Primarily agricultural fields; portion of sand quarry
*%-----------------|-------------------------------------------------------------|
*%    -2020-12-17 "S-1-Undev" and "S-1-Fost" was a part of Foster drain, they are below the foster pond. Now they are added to S-1 subcatchment based on Project 1474-BCDC, JFSA, Nov. 2020
*%    -2020-12-17 Change O-14 (it was part of Okeefe drain) to "S-1-Okeefe" and add it to S-1 subcatchment based on Project 1474-BCDC, JFSA, Nov. 2020
*%    -2020-12-17 Add "S-1-BCDC" as NASHYD
*%    -2020-12-17 all other S-1 subcatchment as STANDHYD with DUALHYD and ROUTE RESERVOIR
*%-----------------|-------------------------------------------------------------|
*#*****************************************************************************
*   -JFSA 2021-02-26  "S-1-A" is a part of S-1 sub-catchment. It is moved to drain before station 6016 on Jock River
*CONTINUOUS NASHYD   NHYD=["S-1-A"], DT=[1]min, AREA=[75.88](ha),
*                    DWF=[0](cms), CN/C=[77],  IA=[4.67](mm),
*                    N=[3], TP=[0.619]hrs,
*                    Continuous simulation parameters:
*                    IaRECper=[4](hrs),
*                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                    InterEventTime=[12](hrs)
*                    Baseflow simulation parameters:
*                    BaseFlowOption=[1] ,
*                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
*                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-------------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["S-1-B"], DT=[1]min, AREA=[55.36](ha),
                    DWF=[0](cms), CN/C=[77],  IA=[4.67](mm),
                    N=[3], TP=[0.451]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-------------------------------------------------------------|
*#    -  JFSA 2021-02-24 change the name from S-1-BCDC to S-1-A and S-1-B. Change their TP values based on the new areas compared to the old ones.
*CONTINUOUS NASHYD   NHYD=["S-1-BCDC"], DT=[1]min, AREA=[134.9](ha),
*                    DWF=[0](cms), CN/C=[77],  IA=[4.67](mm),
*                    N=[3], TP=[1.10]hrs,
*                    Continuous simulation parameters:
*                    IaRECper=[4](hrs),
*                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                    InterEventTime=[12](hrs)
```

```
*                     Baseflow simulation parameters:
*                     BaseFlowOption=[1] ,
*                     InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
*                     VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-------------------------------------------------------------|
*#    -  JFSA 2021-02-24 "S-1-BCDC-1" and "S-1-BCDC-2" are not existing anymore. "S-1-BCDC-1" is part of "S-1-FO-D2" and "S-1-BCDC-2" is part of "S-1-D2" and "S-1-D3"
*CONTINUOUS NASHYD   NHYD=["S-1-BCDC-1"], DT=[1]min, AREA=[0.3](ha),
*                     DWF=[0](cms), CN/C=[77],  IA=[4.67](mm),
*                     N=[3], TP=[1.10]hrs,
*                     Continuous simulation parameters:
*                     IaRECper=[4](hrs),
*                     SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                     InterEventTime=[12](hrs)
*                     Baseflow simulation parameters:
*                     BaseFlowOption=[1] ,
*                     InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
*                     VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-------------------------------------------------------------|
*CONTINUOUS NASHYD   NHYD=["S-1-BCDC-2"], DT=[1]min, AREA=[1.3](ha),
*                     DWF=[0](cms), CN/C=[77],  IA=[4.67](mm),
*                     N=[3], TP=[1.10]hrs,
*                     Continuous simulation parameters:
*                     IaRECper=[4](hrs),
*                     SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                     InterEventTime=[12](hrs)
*                     Baseflow simulation parameters:
*                     BaseFlowOption=[1] ,
*                     InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
*                     VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-------------------------------------------------------------|
*#    -  JFSA 2021-01-19, after adding Greenbank pond, "S-1-BCDC-3" is not existing anymore
*CONTINUOUS NASHYD   NHYD=["S-1-BCDC-3"], DT=[1]min, AREA=[3.9](ha),
*                     DWF=[0](cms), CN/C=[77],  IA=[4.67](mm),
*                     N=[3], TP=[1.10]hrs,
*                     Continuous simulation parameters:
*                     IaRECper=[4](hrs),
*                     SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                     InterEventTime=[12](hrs)
*                     Baseflow simulation parameters:
*                     BaseFlowOption=[1] ,
*                     InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
*                     VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-------------------------------------------------------------|
*   -JFSA 2021-02-25  "S-1-Okeefe" is a part of S-1 sub-catchment. It is moved to drain before station 7245 on Jock River
*CONTINUOUS STANDHYD NHYD=["S-1-Okeefe"], DT=[1](min), AREA=[44.93](ha), XIMP=[0.65], TIMP=[0.65], DWF=[0](cms),
*                     LOSS=[2], SCS curve number CN=[75], Pervious surfaces: IAper=[4.67](mm), SLPP=[2.0](%),
*                     LGP=[40](m), MNP=[0.25], SCP=[0](min), Impervious surfaces: IAimp=[1.57](mm), SLPI=[0.75](%),
*                     LGI=[547.296](m), MNI=[0.013], SCI=[0](min),
*                     Continuous simulation parameters:
*                     IaRECper=[4](hrs),  IaRECimp=[4](hrs),
*                     SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                     InterEventTime=[12](hrs),   END=-1
*%-----------------|-------------------------------------------------------------|
*COMPUTE DUALHYD     NHYDin=["S-1-Okeefe"], CINLET=[4.796](cms), NINLET=[1],
*                     MajNHYD=["S-1-OkMJ"]
*                     MinNHYD=["S-1-OkMN"]
*                     TMJSTO=[9999999](cu-m)
*%-----------------|-------------------------------------------------------------|
*ADD HYD             NHYDsum=["S-1-OkS"], NHYDs to add=["S-1-OkMJ"+"S-1-OkMN"]
*%-----------------|-------------------------------------------------------------|
```

```
*ROUTE RESERVOIR     NHYDout=["S-1-OkSR"] ,NHYDin=["S-1-OkS"] ,
*                    RDT=[1](min),
*                          TABLE of ( OUTFLOW-STORAGE ) values
*                                      (cms) - (ha-m)
*                                    [ 0.0     , 0.0 ]
*                                    [ 0.5370, 1.7917 ]
*                                    [    -1  ,  -1    ]  (max twenty pts)
*                          NHYDovf=["S-1-OkSovf"]
*%-----------------|------------------------------------------------------------|
*CONTINUOUS NASHYD   NHYD=["S-1-Okeefe"], DT=[1]min, AREA=[44.93](ha),
*                    DWF=[0](cms), CN/C=[77],  IA=[4.67](mm),
*                    N=[3], TP=[1.049]hrs,
*                    Continuous simulation parameters:
*                    IaRECper=[4](hrs),
*                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                    InterEventTime=[12](hrs)
*                    Baseflow simulation parameters:
*                    BaseFlowOption=[1] ,
*                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
*                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|------------------------------------------------------------|
*   -JFSA 2021-02-26  "S-1-FO-D1" is a part of S-1 sub-catchment. It is moved to drain
before station 520 on Foster Drain
*CONTINUOUS STANDHYD NHYD=["S-1-FO-D1"], DT=[1]min, AREA=[5.11](ha),
*                    XIMP=[0.65], TIMP=[0.65], DWF=[0](cms), LOSS=[2],
*                    SCS curve number CN=[74],
*                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[0.5](%),
*                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
*                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[0.5](%),
*                            LGI=[184.572](m), MNI=[0.013], SCI=[0](min),
*                    Continuous simulation parameters:
*                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
*                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                    InterEventTime=[18](hrs),   END=-1
*%-----------------|------------------------------------------------------------|
*COMPUTE DUALHYD     NHYDin=["S-1-FO-D1"], CINLET=[0.605](cms), NINLET=[1],
*                    MajNHYD=["S-1-FO-D1J"]
*                    MinNHYD=["S-1-FO-D1N"]
*                    TMJSTO=[9999999](cu-m)
*%-----------------|------------------------------------------------------------|
*ADD HYD             NHYDsum=["S-1-FO-D1S"], NHYDs to add=["S-1-FO-D1N"+"S-1-FO-D1J"]
*%-----------------|------------------------------------------------------------|
*ROUTE RESERVOIR     NHYDout=["S-1-FO-D1R"] ,NHYDin=["S-1-FO-D1S"] ,
*                    RDT=[1](min),
*                          TABLE of ( OUTFLOW-STORAGE ) values
*                                      (cms) - (ha-m)
*                                    [ 0.0     , 0.0 ]
*                                    [ 0.0611, 0.2038 ]
*                                    [    -1  ,  -1    ]  (max twenty pts)
*                          NHYDovf=["S-1FOD1ovf"]
*%-----------------|------------------------------------------------------------|
*CONTINUOUS NASHYD   NHYD=["S-1-FO-D1"], DT=[1]min, AREA=[5.11](ha),
*                    DWF=[0](cms), CN/C=[77],  IA=[4.67](mm),
*                    N=[3], TP=[1.10]hrs,
*                    Continuous simulation parameters:
*                    IaRECper=[4](hrs),
*                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                    InterEventTime=[12](hrs)
*                    Baseflow simulation parameters:
*                    BaseFlowOption=[1] ,
*                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
*                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|------------------------------------------------------------|
*   -JFSA 2021-02-26  "S-1-FO-D2" is a part of S-1 sub-catchment. It is moved to drain
before station 980 on Foster Drain
*CONTINUOUS STANDHYD NHYD=["S-1-FO-D2"], DT=[1]min, AREA=[4.94](ha),
```

```
*                     XIMP=[0.55], TIMP=[0.55], DWF=[0](cms), LOSS=[2],
*                     SCS curve number CN=[74],
*                     Pervious   surfaces: IAper=[4.67](mm), SLPP=[0.5](%),
*                             LGP=[40](m), MNP=[0.25], SCP=[0](min),
*                     Impervious surfaces: IAimp=[1.57](mm), SLPI=[0.5](%),
*                             LGI=[181.475](m), MNI=[0.013], SCI=[0](min),
*                     Continuous simulation parameters:
*                     IaRECper=[4](hrs),  IaRECimp=[4](hrs),
*                     SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                     InterEventTime=[18](hrs),   END=-1
*%-----------------|-----------------------------------------------------------|
*CONTINUOUS NASHYD   NHYD=["S-1-FO-D2"], DT=[1]min, AREA=[4.94](ha),
*                     DWF=[0](cms), CN/C=[77],  IA=[4.67](mm),
*                     N=[3], TP=[1.10]hrs,
*                     Continuous simulation parameters:
*                     IaRECper=[4](hrs),
*                     SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                     InterEventTime=[12](hrs)
*                     Baseflow simulation parameters:
*                     BaseFlowOption=[1] ,
*                     InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
*                     VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
*COMPUTE DUALHYD     NHYDin=["S-1-FO-D2"], CINLET=[0.508](cms), NINLET=[1],
*                     MajNHYD=["S-1-FO-D2J"]
*                     MinNHYD=["S-1-FO-D2N"]
*                     TMJSTO=[9999999](cu-m)
*%-----------------|-----------------------------------------------------------|
*ADD HYD             NHYDsum=["S-1-FO-D2S"], NHYDs to add=["S-1-FO-D2J"+"S-1-FO-D2N"]
*%-----------------|-----------------------------------------------------------|
*ROUTE RESERVOIR     NHYDout=["S-1-FO-D2R"] ,NHYDin=["S-1-FO-D2S"] ,
*                     RDT=[1](min),
*                           TABLE of ( OUTFLOW-STORAGE ) values
*                                       (cms) - (ha-m)
*                                     [ 0.0     , 0.0 ]
*                                     [ 0.0590, 0.1970 ]
*                                     [    -1  ,  -1    ]  (max twenty pts)
*                           NHYDovf=["S-1FOD2ovf"]
*%-----------------|-----------------------------------------------------------|
*   -JFSA 2021-02-26  "S-1-FO-F-D" is a part of S-1 sub-catchment. It is moved to drain
before station 6016 on Jock River
*CONTINUOUS STANDHYD NHYD=["S-1-FO-F-D"], DT=[1]min, AREA=[14.96](ha),
*                     XIMP=[0.65], TIMP=[0.65], DWF=[0](cms), LOSS=[2],
*                     SCS curve number CN=[74],
*                     Pervious   surfaces: IAper=[4.67](mm), SLPP=[0.5](%),
*                             LGP=[40](m), MNP=[0.25], SCP=[0](min),
*                     Impervious surfaces: IAimp=[1.57](mm), SLPI=[0.5](%),
*                             LGI=[315.806](m), MNI=[0.013], SCI=[0](min),
*                     Continuous simulation parameters:
*                     IaRECper=[4](hrs),  IaRECimp=[4](hrs),
*                     SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                     InterEventTime=[18](hrs),   END=-1
*%-----------------|-----------------------------------------------------------|
*CONTINUOUS NASHYD   NHYD=["S-1-FO-F-D"], DT=[1]min, AREA=[14.96](ha),
*                     DWF=[0](cms), CN/C=[77],  IA=[4.67](mm),
*                     N=[3], TP=[1.007]hrs,
*                     Continuous simulation parameters:
*                     IaRECper=[4](hrs),
*                     SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                     InterEventTime=[12](hrs)
*                     Baseflow simulation parameters:
*                     BaseFlowOption=[1] ,
*                     InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
*                     VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
*COMPUTE DUALHYD     NHYDin=["S-1-FO-F-D"], CINLET=[1.749](cms), NINLET=[1],
```

```
*                       MajNHYD=["S-1FO-F-DJ"]
*                       MinNHYD=["S-1FO-F-DN"]
*                       TMJSTO=[9999999](cu-m)
*%-----------------|-------------------------------------------------------------|
*ADD HYD                NHYDsum=["S-1FO-F-DS"], NHYDs to add=["S-1FO-F-DJ"+"S-1FO-F-DN"]
*%-----------------|-------------------------------------------------------------|
*ROUTE RESERVOIR        NHYDout=["S-1FO-F-DR"] ,NHYDin=["S-1FO-F-DS"] ,
*                       RDT=[1](min),
*                             TABLE of ( OUTFLOW-STORAGE ) values
*                                         (cms) - (ha-m)
*                                       [ 0.0     , 0.0 ]
*                                       [ 0.1788, 0.5966 ]
*                                       [    -1  ,  -1    ]  (max twenty pts)
*                             NHYDovf=["S-1FoFDovf"]
*%-----------------|-------------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["S-1-D1"], DT=[1](min), AREA=[21.67](ha), XIMP=[0.65],
TIMP=[0.65], DWF=[0](cms),
                    LOSS=[2], SCS curve number CN=[75], Pervious surfaces:
                    IAper=[4.67](mm), SLPP=[2.0](%),
                    LGP=[40](m), MNP=[0.25], SCP=[0](min), Impervious surfaces:
                    IAimp=[1.57](mm), SLPI=[0.75](%),
                    LGI=[380.088](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs),   END=-1
*%-----------------|-------------------------------------------------------------|
*CONTINUOUS NASHYD      NHYD=["S-1-D1"], DT=[1]min, AREA=[21.67](ha),
*                       DWF=[0](cms), CN/C=[77],  IA=[4.67](mm),
*                       N=[3], TP=[1.066]hrs,
*                       Continuous simulation parameters:
*                       IaRECper=[4](hrs),
*                       SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                       InterEventTime=[12](hrs)
*                       Baseflow simulation parameters:
*                       BaseFlowOption=[1] ,
*                       InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
*                       VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-------------------------------------------------------------|
*COMPUTE DUALHYD        NHYDin=["S-1-D1"], CINLET=[2.482](cms), NINLET=[1],
*                       MajNHYD=["S-1-D1J"]
*                       MinNHYD=["S-1-D1N"]
*                       TMJSTO=[9999999](cu-m)
*%-----------------|-------------------------------------------------------------|
*ADD HYD                NHYDsum=["S-1-D1S"], NHYDs to add=["S-1-D1J"+"S-1-D1N"]
*%-----------------|-------------------------------------------------------------|
*ROUTE RESERVOIR        NHYDout=["S-1-D1R"] ,NHYDin=["S-1-D1S"] ,
*                       RDT=[1](min),
*                             TABLE of ( OUTFLOW-STORAGE ) values
*                                         (cms) - (ha-m)
*                                       [ 0.0     , 0.0 ]
*                                       [ 0.2590, 0.8642 ]
*                                       [    -1  ,  -1    ]  (max twenty pts)
*                             NHYDovf=["S-1-D1Rovf"]
*%-----------------|-------------------------------------------------------------|
*   -JFSA 2021-02-25  "S-1-D2" and "S-1-D3" are part of S-1 sub-catchment. They are
moved to drain before station 6215 on Jock River
*CONTINUOUS STANDHYD NHYD=["S-1-D2"], DT=[1](min), AREA=[18.67](ha), XIMP=[0.65],
TIMP=[0.65], DWF=[0](cms),
*                       LOSS=[2], SCS curve number CN=[75], Pervious surfaces:
IAper=[4.67](mm), SLPP=[2.0](%),
*                       LGP=[40](m), MNP=[0.25], SCP=[0](min), Impervious surfaces:
IAimp=[1.57](mm), SLPI=[0.75](%),
*                       LGI=[352.798](m), MNI=[0.013], SCI=[0](min),
*                       Continuous simulation parameters:
*                       IaRECper=[4](hrs),  IaRECimp=[4](hrs),
```

```
*                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                    InterEventTime=[12](hrs),   END=-1
*%-----------------|-----------------------------------------------------------|
*CONTINUOUS NASHYD   NHYD=["S-1-D2"], DT=[1]min, AREA=[18.67](ha),
*                    DWF=[0](cms), CN/C=[77],  IA=[4.67](mm),
*                    N=[3], TP=[1.120]hrs,
*                    Continuous simulation parameters:
*                    IaRECper=[4](hrs),
*                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                    InterEventTime=[12](hrs)
*                    Baseflow simulation parameters:
*                    BaseFlowOption=[1] ,
*                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
*                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
*COMPUTE DUALHYD     NHYDin=["S-1-D2"], CINLET=[2.062](cms), NINLET=[1],
*                    MajNHYD=["S-1-D2J"]
*                    MinNHYD=["S-1-D2N"]
*                    TMJSTO=[9999999](cu-m)
*%-----------------|-----------------------------------------------------------|
*ADD HYD             NHYDsum=["S-1-D2S"], NHYDs to add=["S-1-D2J"+"S-1-D2N"]
*%-----------------|-----------------------------------------------------------|
*ROUTE RESERVOIR     NHYDout=["S-1-D2R"] ,NHYDin=["S-1-D2S"] ,
*                    RDT=[1](min),
*                          TABLE of ( OUTFLOW-STORAGE ) values
*                                      (cms) - (ha-m)
*                                    [ 0.0     , 0.0 ]
*                                    [ 0.2231, 0.7445 ]
*                                    [    -1  ,  -1    ]  (max twenty pts)
*                          NHYDovf=["S-1-D2Rovf"]
*%-----------------|-----------------------------------------------------------|
*CONTINUOUS STANDHYD NHYD=["S-1-D3"], DT=[1](min), AREA=[6.79](ha), XIMP=[0.65], TIMP=[0.65], DWF=[0](cms),
*                    LOSS=[2], SCS curve number CN=[75], Pervious surfaces: IAper=[4.67](mm), SLPP=[2.0](%),
*                    LGP=[40](m), MNP=[0.25], SCP=[0](min), Impervious surfaces: IAimp=[1.57](mm), SLPI=[0.75](%),
*                    LGI=[212.760](m), MNI=[0.013], SCI=[0](min),
*                    Continuous simulation parameters:
*                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
*                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                    InterEventTime=[12](hrs),   END=-1
*%-----------------|-----------------------------------------------------------|
*CONTINUOUS NASHYD   NHYD=["S-1-D3"], DT=[1]min, AREA=[6.79](ha),
*                    DWF=[0](cms), CN/C=[77],  IA=[4.67](mm),
*                    N=[3], TP=[1.281]hrs,
*                    Continuous simulation parameters:
*                    IaRECper=[4](hrs),
*                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                    InterEventTime=[12](hrs)
*                    Baseflow simulation parameters:
*                    BaseFlowOption=[1] ,
*                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
*                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
*COMPUTE DUALHYD     NHYDin=["S-1-D3"], CINLET=[0.719](cms), NINLET=[1],
*                    MajNHYD=["S-1-D3J"]
*                    MinNHYD=["S-1-D3N"]
*                    TMJSTO=[9999999](cu-m)
*%-----------------|-----------------------------------------------------------|
*ADD HYD             NHYDsum=["S-1-D3S"], NHYDs to add=["S-1-D3J"+"S-1-D3N"]
*%-----------------|-----------------------------------------------------------|
*ROUTE RESERVOIR     NHYDout=["S-1-D3R"] ,NHYDin=["S-1-D3S"] ,
*                    RDT=[1](min),
*                          TABLE of ( OUTFLOW-STORAGE ) values
*                                      (cms) - (ha-m)
```

```
*                                    [ 0.0     , 0.0 ]
*                                    [ 0.0811, 0.2708 ]
*                                    [    -1  ,  -1    ]  (max twenty pts)
*                          NHYDovf=["S-1-D3Rovf"]
*%-----------------|-----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["S-1-D4"], DT=[1](min), AREA=[3.28](ha), XIMP=[0.65],
TIMP=[0.65], DWF=[0](cms),
                    LOSS=[2], SCS curve number CN=[75], Pervious surfaces:
                    IAper=[4.67](mm), SLPP=[2.0](%),
                    LGP=[40](m), MNP=[0.25], SCP=[0](min), Impervious surfaces:
                    IAimp=[1.57](mm), SLPI=[0.75](%),
                    LGI=[147.874](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs),   END=-1
*%-----------------|-----------------------------------------------------------|
*CONTINUOUS NASHYD   NHYD=["S-1-D4"], DT=[1]min, AREA=[3.28](ha),
*                    DWF=[0](cms), CN/C=[77],  IA=[4.67](mm),
*                    N=[3], TP=[1.10]hrs,
*                    Continuous simulation parameters:
*                    IaRECper=[4](hrs),
*                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                    InterEventTime=[12](hrs)
*                    Baseflow simulation parameters:
*                    BaseFlowOption=[1] ,
*                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
*                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
*COMPUTE DUALHYD     NHYDin=["S-1-D4"], CINLET=[0.373](cms), NINLET=[1],
*                    MajNHYD=["S-1-D4J"]
*                    MinNHYD=["S-1-D4N"]
*                    TMJSTO=[9999999](cu-m)
*%-----------------|-----------------------------------------------------------|
*ADD HYD             NHYDsum=["S-1-D4S"], NHYDs to add=["S-1-D4J"+"S-1-D4N"]
*%-----------------|-----------------------------------------------------------|
*ROUTE RESERVOIR     NHYDout=["S-1-D4R"] ,NHYDin=["S-1-D4S"] ,
*                    RDT=[1](min),
*                          TABLE of ( OUTFLOW-STORAGE ) values
*                                      (cms) - (ha-m)
*                                    [ 0.0     , 0.0 ]
*                                    [ 0.0392, 0.1308 ]
*                                    [    -1  ,  -1    ]  (max twenty pts)
*                          NHYDovf=["S-1-D4Rovf"]
*%-----------------|-----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["S-1-D5"], DT=[1](min), AREA=[12.84](ha), XIMP=[0.65],
TIMP=[0.65], DWF=[0](cms),
                    LOSS=[2], SCS curve number CN=[75], Pervious surfaces:
                    IAper=[4.67](mm), SLPP=[2.0](%),
                    LGP=[40](m), MNP=[0.25], SCP=[0](min), Impervious surfaces:
                    IAimp=[1.57](mm), SLPI=[0.75](%),
                    LGI=[292.57](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs),   END=-1
*%-----------------|-----------------------------------------------------------|
*CONTINUOUS NASHYD   NHYD=["S-1-D5"], DT=[1]min, AREA=[12.84](ha),
*                    DWF=[0](cms), CN/C=[77],  IA=[4.67](mm),
*                    N=[3], TP=[1.10]hrs,
*                    Continuous simulation parameters:
*                    IaRECper=[4](hrs),
*                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                    InterEventTime=[12](hrs)
*                    Baseflow simulation parameters:
*                    BaseFlowOption=[1] ,
```

```
*                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
*                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
*COMPUTE DUALHYD     NHYDin=["S-1-D5"], CINLET=[1.395](cms), NINLET=[1],
*                    MajNHYD=["S-1-D5J"]
*                    MinNHYD=["S-1-D5N"]
*                    TMJSTO=[9999999](cu-m)
*%-----------------|-----------------------------------------------------------|
*ADD HYD             NHYDsum=["S-1-D5S"], NHYDs to add=["S-1-D5J"+"S-1-D5N"]
*%-----------------|-----------------------------------------------------------|
*ROUTE RESERVOIR     NHYDout=["S-1-D5R"] ,NHYDin=["S-1-D5S"] ,
*                    RDT=[1](min),
*                          TABLE of ( OUTFLOW-STORAGE ) values
*                                      (cms) - (ha-m)
*                                    [ 0.0     , 0.0 ]
*                                    [ 0.1535, 0.5120 ]
*                                    [    -1  ,  -1    ]  (max twenty pts)
*                          NHYDovf=["S-1-D5Rovf"]
*%-----------------|-----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["S-1-D6"], DT=[1](min), AREA=[1.75](ha), XIMP=[0.65],
TIMP=[0.65], DWF=[0](cms),
                    LOSS=[2], SCS curve number CN=[75], Pervious surfaces:
                    IAper=[4.67](mm), SLPP=[2.0](%),
                    LGP=[40](m), MNP=[0.25], SCP=[0](min), Impervious surfaces:
                    IAimp=[1.57](mm), SLPI=[0.75](%),
                    LGI=[108.01](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs),   END=-1
*%-----------------|-----------------------------------------------------------|
*CONTINUOUS NASHYD   NHYD=["S-1-D6"], DT=[1]min, AREA=[1.75](ha),
*                    DWF=[0](cms), CN/C=[77],  IA=[4.67](mm),
*                    N=[3], TP=[1.10]hrs,
*                    Continuous simulation parameters:
*                    IaRECper=[4](hrs),
*                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                    InterEventTime=[12](hrs)
*                    Baseflow simulation parameters:
*                    BaseFlowOption=[1] ,
*                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
*                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
*COMPUTE DUALHYD     NHYDin=["S-1-D6"], CINLET=[0.218](cms), NINLET=[1],
*                    MajNHYD=["S-1-D6J"]
*                    MinNHYD=["S-1-D6N"]
*                    TMJSTO=[9999999](cu-m)
*%-----------------|-----------------------------------------------------------|
*ADD HYD             NHYDsum=["S-1-D6S"], NHYDs to add=["S-1-D6J"+"S-1-D6N"]
*%-----------------|-----------------------------------------------------------|
*ROUTE RESERVOIR     NHYDout=["S-1-D6R"] ,NHYDin=["S-1-D6S"] ,
*                    RDT=[1](min),
*                          TABLE of ( OUTFLOW-STORAGE ) values
*                                      (cms) - (ha-m)
*                                    [ 0.0     , 0.0 ]
*                                    [ 0.0209, 0.0698 ]
*                                    [    -1  ,  -1    ]  (max twenty pts)
*                          NHYDovf=["S-1-D6Rovf"]
*%-----------------|-----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["S-1-D7"], DT=[1](min), AREA=[2.03](ha), XIMP=[0.65],
TIMP=[0.65], DWF=[0](cms),
                    LOSS=[2], SCS curve number CN=[75], Pervious surfaces:
                    IAper=[4.67](mm), SLPP=[2.0](%),
                    LGP=[40](m), MNP=[0.25], SCP=[0](min), Impervious surfaces:
                    IAimp=[1.57](mm), SLPI=[0.75](%),
                    LGI=[116.33](m), MNI=[0.013], SCI=[0](min),
```

```
                     Continuous simulation parameters:
                     IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                     SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                     InterEventTime=[12](hrs),   END=-1
*%-----------------|-----------------------------------------------------------|
*CONTINUOUS NASHYD   NHYD=["S-1-D7"], DT=[1]min, AREA=[2.03](ha),
*                    DWF=[0](cms), CN/C=[77],  IA=[4.67](mm),
*                    N=[3], TP=[1.10]hrs,
*                    Continuous simulation parameters:
*                    IaRECper=[4](hrs),
*                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                    InterEventTime=[12](hrs)
*                    Baseflow simulation parameters:
*                    BaseFlowOption=[1] ,
*                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
*                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
*COMPUTE DUALHYD     NHYDin=["S-1-D7"], CINLET=[2.279](cms), NINLET=[1],
*                    MajNHYD=["S-1-D7J"]
*                    MinNHYD=["S-1-D7N"]
*                    TMJSTO=[9999999](cu-m)
*%-----------------|-----------------------------------------------------------|
*ADD HYD             NHYDsum=["S-1-D7S"], NHYDs to add=["S-1-D7J"+"S-1-D7N"]
*%-----------------|-----------------------------------------------------------|
*ROUTE RESERVOIR     NHYDout=["S-1-D7R"] ,NHYDin=["S-1-D7S"] ,
*                    RDT=[1](min),
*                          TABLE of ( OUTFLOW-STORAGE ) values
*                                     (cms) - (ha-m)
*                                   [ 0.0     , 0.0 ]
*                                   [ 0.0243, 0.0810 ]
*                                   [    -1  ,  -1    ]  (max twenty pts)
*                          NHYDovf=["S-1-D8Rovf"]
*%-----------------|-----------------------------------------------------------|
*   -JFSA 2021-02-26  "S-1-D8" is a part of S-1 sub-catchment. It is moved to drain before station 6016 on Jock River
*CONTINUOUS STANDHYD NHYD=["S-1-D8"], DT=[1](min), AREA=[5.27](ha), XIMP=[0.65], TIMP=[0.65], DWF=[0](cms),
*                    LOSS=[2], SCS curve number CN=[75], Pervious surfaces: IAper=[4.67](mm), SLPP=[2.0](%),
*                    LGP=[40](m), MNP=[0.25], SCP=[0](min), Impervious surfaces: IAimp=[1.57](mm), SLPI=[0.75](%),
*                    LGI=[187.439](m), MNI=[0.013], SCI=[0](min),
*                    Continuous simulation parameters:
*                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
*                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                    InterEventTime=[12](hrs),   END=-1
*%-----------------|-----------------------------------------------------------|
*CONTINUOUS NASHYD   NHYD=["S-1-D8"], DT=[1]min, AREA=[5.27](ha),
*                    DWF=[0](cms), CN/C=[77],  IA=[4.67](mm),
*                    N=[3], TP=[1.10]hrs,
*                    Continuous simulation parameters:
*                    IaRECper=[4](hrs),
*                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                    InterEventTime=[12](hrs)
*                    Baseflow simulation parameters:
*                    BaseFlowOption=[1] ,
*                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
*                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
*COMPUTE DUALHYD     NHYDin=["S-1-D8"], CINLET=[2.279](cms), NINLET=[1],
*                    MajNHYD=["S-1-D8J"]
*                    MinNHYD=["S-1-D8N"]
*                    TMJSTO=[9999999](cu-m)
*%-----------------|-----------------------------------------------------------|
*ADD HYD             NHYDsum=["S-1-D8S"], NHYDs to add=["S-1-D8J"+"S-1-D8N"]
*%-----------------|-----------------------------------------------------------|
```

```
*ADD HYD             NHYDsum=["S-1-D"], NHYDs to add=["S-1-Okeefe"+"S-1"+"S-1-Fost"]
*%-----------------|-------------------------------------------------------------|
*COMPUTE DUALHYD     NHYDin=["S-1-D"], CINLET=[11.616](cms), NINLET=[1],
*                    MajNHYD=["S-1-D-MJ"]
*                    MinNHYD=["S-1-D-MN"]
*                    TMJSTO=[5974](cu-m)
*%-----------------|-------------------------------------------------------------|
*ADD HYD             NHYDsum=["S-1-DEV"], NHYDs to add=["S-1-D-MJ"+"S-1-D-MN"]
*%-----------------|-------------------------------------------------------------|
*ROUTE RESERVOIR     NHYDout=["S-1-D8R"] ,NHYDin=["S-1-D8S"] ,
*                    RDT=[1](min),
*                          TABLE of ( OUTFLOW-STORAGE ) values
*                                      (cms) - (ha-m)
*                                    [ 0.0     , 0.0 ]
*                                    [ 0.0630, 0.2102 ]
*                                    [    -1  ,  -1    ]  (max twenty pts)
*                          NHYDovf=["S-1-D8Rovf"]
*%-----------------|-------------------------------------------------------------|
*%-----------------|-------------------------------------------------------------|
*       -JFSA 2021-02-08 Clarke (MS_P2 and P2-OVF) and Clarke Undeveloped area (W_CLAR_UNDE) drain to Jock River at Station 5002 instead of Station 4534
*#    Catchment W_CLAR
*#    - To West Clarke Drain (south of the Jock)
*#    - Subdivision with 43% imp. as per Barrhaven South MSS
*#    - 2020-11-30 update CLARKE Tributary Drainage Area to  = 121 ha based on P598(04)-11
*#    - 2020-11-30 split CLARKE Drainage Area to MAJOR and ALL
*#*******************************************************************************
CONTINUOUS STANDHYD NHYD=["W_CLAR_MJ"], DT=[1]min, AREA=[1.772](ha),
                    XIMP=[0.46], TIMP=[0.59], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[77],
                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
                            LGI=[109](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[18](hrs),   END=-1
*%-----------------|-------------------------------------------------------------|
*COMPUTE DUALHYD     NHYDin=["W_CLAR_MJ"], CINLET=[0.213](cms), NINLET=[1],
*                    MajNHYD=["W_CLAR_MJj"]
*                    MinNHYD=["W_CLAR_MJn"]
*                    TMJSTO=[0.1](cu-m)
*%-----------------|-------------------------------------------------------------|
*# 5-Year + 12% Capture
ROUTE RESERVOIR     NHYDout=["W_CLAR_MJn"] ,NHYDin=["W_CLAR_MJ"] ,
                    RDT=[1](min),
                          TABLE of ( OUTFLOW-STORAGE ) values
                                      (cms) - (ha-m)
                                    [ 0.0     , 0.0 ]
                                    [ 0.213 , 0.0001 ]
                                    [    -1  ,  -1    ]  (max twenty pts)
                          NHYDovf=["W_CLAR_MJj"] ,
*%-----------------|-------------------------------------------------------------|
*     -Clarke_All area from  P 598(04)-11 = 120.207 ha, change to 127.298 ha based on GIS measurements,
*     -JFSA, 2021-01-19  update W_CLAR_ALL to (121.17-1.772=119.398) ha based on GIS measurements W_CLAR is 121.17 ha and W_CLAR_MJ is 1.772 ha
CONTINUOUS STANDHYD NHYD=["W_CLAR_ALL"], DT=[1]min, AREA=[119.398](ha),
                    XIMP=[0.60], TIMP=[0.65], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[77],
                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
                            LGI=[892.18](m), MNI=[0.013], SCI=[0](min),
```

```
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[18](hrs),   END=-1
*%-----------------|------------------------------------------------------------|
ADD HYD             NHYDsum=["W_CLAR"], NHYDs to add=["W_CLAR_ALL"+"W_CLAR_MJj"]
*%-----------------|------------------------------------------------------------|
SAVE HYD            NHYD=["W_CLAR"],   # OF PCYCLES=[-1],  ICASEsh=[1]
                    HYD_COMMENT=["Total Flows to West Clarke"]
*#****************************************************************************
*#    West Clarke Pond 2
*#    - Rating curve obtained from Barrhaven South MSS modeling
*#    - Tributary Drainage Area to MSS Pond 2 = 241 ha
*#****************************************************************************
ROUTE RESERVOIR     NHYDout=["MS_P2"],  NHYDin=["W_CLAR"],
                    RDT=[1](min),
                          TABLE of ( OUTFLOW-STORAGE ) values
                                      (cms) - (ha-m)
                                    [   0.0 ,  0.0 ]
                                    [ 0.128 , 0.161 ]
                                    [ 0.138 , 0.409 ]
                                    [ 0.148 , 0.68 ]
                                    [ 0.227 , 0.931 ]
                                    [ 0.354 , 1.223 ]
                                    [ 0.505 , 1.52 ]
                                    [ 0.666 , 1.821 ]
                                    [ 0.831 , 2.123 ]
                                    [ 0.995 , 2.434 ]
                                    [ 1.069 , 2.583 ]
                                    [ 1.51 , 2.647 ]
                                    [ 4.904 , 2.861 ]
                                    [ 13.048 , 3.188 ]
                                    [ 23.745 , 3.523 ]
                                    [ 36.474 , 3.871 ]
                                    [ 45.938 , 4.127 ]
                                    [ 61.652 , 4.539 ]
                                    [   -1  ,  -1  ]  (max twenty pts)
                          NHYDovf=["P2-OVF"]
*%-----------------|------------------------------------------------------------|
*#****************************************************************************
*     -JFSA, 2021-01-22  "W_CLAR_UNDE" (west of Clarke sub-catchment) discharges
directly to the jock river through a road side ditch on the west side of Borrisokane
road (station 6016)
*CONTINUOUS NASHYD   NHYD=["W_CLAR_UNDE"], DT=[1]min, AREA=[35.65](ha),
*                    DWF=[0](cms), CN/C=[77],  IA=[4.67](mm),
*                    N=[3], TP=[1.10]hrs,
*                    Continuous simulation parameters:
*                    IaRECper=[4](hrs),
*                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                    InterEventTime=[12](hrs)
*                    Baseflow simulation parameters:
*                    BaseFlowOption=[1] ,
*                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
*                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|------------------------------------------------------------|
ADD HYD             NHYDsum=["SN_CE"], NHYDs to
add=["N_CE"+"S-1-D4"+"S-1-D5"+"MS_P2"+"P2-OVF"]
*%-----------------|------------------------------------------------------------|
SAVE HYD            NHYD=["SN_CE"],   # OF PCYCLES=[-1],  ICASEsh=[1]
                    HYD_COMMENT=["Total Flows before Station 5737 on Jock River"]
*%-----------------|------------------------------------------------------------|
*# Channel X-Section obtained from RVCA Hydraulic Model - Station 5737
*# 2021-02-25 add station 5737 before station 5002. Station 5737 was extracted from the
HEC-RAS model
T:\PROJ\1474-16\Design\20201026-QuantityControlAnalysis\HEC-RAS\JockLidar2005
*# JFSA 2021-03-02  change the slope to 0.0175% instead of 0.02593 to stabilize the model
```

```
ROUTE CHANNEL         NHYDout=["5737"] ,NHYDin=["SN_CE"] ,
                      RDT=[1](min),
                      CHLGTH=[270](m),  CHSLOPE=[0.0175](%),
                                          FPSLOPE=[0.0175](%),
                      SECNUM=[1.0],       NSEG=[3]
                      ( SEGROUGH, SEGDIST (m))=
                        [0.050,-24.04
                        -0.035,23.92
                        0.050,1130.8] NSEG times
                      ( DISTANCE (m), ELEVATION (m))=
                      [-1060.52, 94 ]
                      [-268.6, 91.5 ]
                      [-259.43, 91.5 ]
                      [-179.48, 91.5 ]
                      [-67.9, 91.5 ]
                      [-59.21, 91.5 ]
                      [-33.19, 91 ]
                      [-26.08, 90.5 ]
                      [-24.04, 90 ]
                      [-13.14, 86.77 ]
                      [0, 85 ]
                      [14.68, 86.74 ]
                      [23.92, 90 ]
                      [25.78, 90.5 ]
                      [31.91, 91 ]
                      [91.95, 91.5 ]
                      [772.15, 92 ]
                      [961.49, 92.5 ]
                      [1044.69, 93 ]
                      [1130.8, 95 ]
*%-----------------|-----------------------------------------------------------|
ADD HYD               NHYDsum=["5002"], NHYDs to add=["5737"+"S-1-D1"+"S-1-D6"+"S-1-D7"]
*%-----------------|-----------------------------------------------------------|
SAVE HYD              NHYD=["5002"],   # OF PCYCLES=[-1],  ICASEsh=[1]
                      HYD_COMMENT=["Total Flows before Station 5002 on Jock River"]
*%-----------------|-----------------------------------------------------------|
*# Hydrograph from Node Cedarview Road routed to Node at West Clarke Drain
*# Channel X-Section obtained from RVCA Hydraulic Model - Station 5002
*# JFSA 2021-02-19 Change the slope from 0.01 % (as per Stantec Report 2007) to 0.0255 % so the model will be more stable and give reasonable results. It is justifiable as ROUTE CHANNELs aren't well suited to really flat slopes.
*# JFSA 2021-02-19 Change to three ROUTE CHANNEL with length 275 m each instead of one with 825 m length so the model will be more stable
*# JFSA 2021-02-26 change the length of 5002 route channel from 825 m to 736 m. That is because of adding station 5737 between station 6016 and station 5002. Then the length from station 5737 to station 5002 is 736 m. Change the slope from 0.0255 % to 0.09511 %
*
ROUTE CHANNEL         NHYDout=["N_WCa"] ,NHYDin=["5002"] ,
                      RDT=[1](min),
                      CHLGTH=[245.33333](m),  CHSLOPE=[0.09511](%),
                                          FPSLOPE=[0.09511](%),
                      SECNUM=[1.0],       NSEG=[3]
                      ( SEGROUGH, SEGDIST (m))=
                        [0.050,-37.5
                        -0.035,37.50
                        0.050,157.05] NSEG times
                      ( DISTANCE (m), ELEVATION (m))=
                      [-601.81, 91.5]
                      [-37.50, 90.00]
                      [-19.61, 87.04]
                      [0.00, 85.70]
                      [14.87, 86.93]
                      [37.50, 90.00]
                      [38.54, 90.50]
                      [42.23, 91]
                      [157.05,91.50]
```

```
*                     [161.44, 91.50]
*                     [236.48, 93.00]
*                     [385.47, 92.50]
*                     [390.78, 92.50]
*%-----------------|-----------------------------------------------------------|
ROUTE CHANNEL        NHYDout=["N_WCb"] ,NHYDin=["N_WCa"] ,
                     RDT=[1](min),
                     CHLGTH=[245.33333](m),  CHSLOPE=[0.09511](%),
                                             FPSLOPE=[0.09511](%),
                     SECNUM=[1.0],       NSEG=[3]
                     ( SEGROUGH, SEGDIST (m))=
                       [0.050,-37.5
                       -0.035,37.50
                       0.050,157.05] NSEG times
                     ( DISTANCE (m), ELEVATION (m))=
                     [-601.81, 91.5]
                     [-37.50, 90.00]
                     [-19.61, 87.04]
                     [0.00, 85.70]
                     [14.87, 86.93]
                     [37.50, 90.00]
                     [38.54, 90.50]
                     [42.23, 91]
                     [157.05,91.50]
*%-----------------|-----------------------------------------------------------|
ROUTE CHANNEL        NHYDout=["N_WC"] ,NHYDin=["N_WCb"] ,
                     RDT=[1](min),
                     CHLGTH=[245.33333](m),  CHSLOPE=[0.09511](%),
                                             FPSLOPE=[0.09511](%),
                     SECNUM=[1.0],       NSEG=[3]
                     ( SEGROUGH, SEGDIST (m))=
                       [0.050,-37.5
                       -0.035,37.50
                       0.050,157.05] NSEG times
                     ( DISTANCE (m), ELEVATION (m))=
                     [-601.81, 91.5]
                     [-37.50, 90.00]
                     [-19.61, 87.04]
                     [0.00, 85.70]
                     [14.87, 86.93]
                     [37.50, 90.00]
                     [38.54, 90.50]
                     [42.23, 91]
                     [157.05,91.50]
*#*****************************************************************************
*       -JFSA 2021-02-08 Clarke (MS_P2 and P2-OVF) and Clarke Undeveloped area (W_CLAR_UNDE) drain to Jock River at Station 5002 instead of Station 4534
*ADD HYD              NHYDsum=["SN_WC"], NHYDs to add=["MS_P2"+"P2-OVF"+"N_WC"+"W_CLAR_UNDE"]
*%-----------------|-----------------------------------------------------------|
*SAVE HYD             NHYD=["SN_WC"],   # OF PCYCLES=[-1],  ICASEsh=[1]
*                    HYD_COMMENT=["Total Flows at West Clarke Pond Outlet"]
*%-----------------|-----------------------------------------------------------|
*# Hydrograph from Node West Clarke routed to Node at Kennedy - Burnett Drain
*# Channel X-Section obtained from RVCA Hydraulic Model - Station 4534
*#
ROUTE CHANNEL        NHYDout=["N_KB"] ,NHYDin=["N_WC"] ,
                     RDT=[1](min),
                     CHLGTH=[1020](m),  CHSLOPE=[0.0498](%),
                                             FPSLOPE=[0.0498](%),
                     SECNUM=[1.0],       NSEG=[3]
                     ( SEGROUGH, SEGDIST (m))=
                       [0.050,-23.63
                       -0.035,23.63
                       0.050,728.3] NSEG times
                     ( DISTANCE (m), ELEVATION (m))=
```

```
                    [-1082.01,94]
                    [-1028.17,92.5]
                    [-992.3,93.5]
                    [-279.34,90]
                    [-23.63,90]
                    [-13.45,87.13]
                    [-0.07,86.24]
                    [10.54,87.15]
                    [23.63,90]
                    [24.86,90.5]
                    [26.72,91]
                    [45.07,91.5]
                    [128.17,91.5]
                    [270.7,92.5]
                    [728.3,95]
*%-----------------|-----------------------------------------------------------|
*#****************************************************************************
*#    Catchment KEN_BU
*#    - To Kennedy-Burnett SWM Facility
*#    - Outlets to Fraser-Clarke drain (north of the Jock)
*#    - Medium density residential subdivision
*     - Add Kennedy Burnett model (Convert PCSWMM from NOVATECH June, 2020 to SWMHYMO)
*#****************************************************************************
*CONTINUOUS STANDHYD NHYD=["KEN_BU"], DT=[1]min, AREA=[281](ha),
*                    XIMP=[0.55], TIMP=[0.55], DWF=[0](cms), LOSS=[2],
*                    SCS curve number CN=[71],
*                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
*                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
*                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
*                            LGI=[1369](m), MNI=[0.013], SCI=[0](min),
*                    Continuous simulation parameters:
*                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
*                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                    InterEventTime=[18](hrs),   END=-1
*%-----------------|-----------------------------------------------------------|
*#****************************************************************************
*#   Existing Kennedy-Burnett SWM Facility
*#    - Rating curve obtained from URTKBP
*#    - Tributary Drainage Area to Pond = 160 ha
*#****************************************************************************
*ROUTE RESERVOIR     NHYDout=["KEN_P"],  NHYDin=["KEN_BU"],
*                    RDT=[1](min),
*                          TABLE of ( OUTFLOW-STORAGE ) values
*                                      (cms) - (ha-m)
*                                [   0.0 ,  0.0 ]
*                                [   0.13 , 0.26]
*                                [   0.43 , 0.56]
*                                [   0.67 , 0.90]
*                                [   0.86 , 1.32]
*                                [   1.01 , 1.79]
*                                [   1.15 , 2.33]
*                                [   -1  ,   -1  ]  (max twenty pts)
*                          NHYDovf=["KEN-OV"]
*%-----------------|-----------------------------------------------------------|
*     -JFSA, 2021-01-19  update all KEN_BU areas based on GIS measurements
CONTINUOUS STANDHYD NHYD=["KB-01A"], DT=[1]min, AREA=[40.82](ha), XIMP=[0.097],
TIMP=[0.4], DWF=[0](cms), LOSS=[1]:
                    Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                    F=[0.00](mm),
                    Pervious   areas: IAper=[4.67](mm), SLPP=[0.5](%), LGP=[40](m),
                    MNP=[0.250], SCP=[0](min),
                    Impervious areas: IAimp=[0.785](mm), SLPI=[0.5](%),
                    LGI=[521.664](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                    END=-1
```

```
*%-----------------|-----------------------------------------------------------|
COMPUTE DUALHYD     NHYDin=["KB-01A"], CINLET=[3.6](cms), NINLET=[1],
                    MajNHYD=["KB-01A-MJ"]
                    MinNHYD=["KB-01A-MN"]
                    TMJSTO=[4995](cu-m)
*%-----------------|-----------------------------------------------------------|
ADD HYD             NHYDsum=["KB-01A-S"], NHYDs to add=["KB-01A-MJ"+"KB-01A-MN"]
*%-----------------|-----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["KB-01B"], DT=[1]min, AREA=[31.1](ha), XIMP=[0.1875],
TIMP=[0.375], DWF=[0](cms), LOSS=[1]:
                    Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                    F=[0.00](mm),
                    Pervious   areas: IAper=[4.67](mm), SLPP=[0.42](%), LGP=[40](m),
                    MNP=[0.250], SCP=[0](min),
                    Impervious areas: IAimp=[0.785](mm), SLPI=[0.42](%),
                    LGI=[455.339](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                    END=-1
*%-----------------|-----------------------------------------------------------|
COMPUTE DUALHYD     NHYDin=["KB-01B"], CINLET=[1.585](cms), NINLET=[1],
                    MajNHYD=["KB-01B-MJ"]
                    MinNHYD=["KB-01B-MN"]
                    TMJSTO=[6075](cu-m)
*%-----------------|-----------------------------------------------------------|
ADD HYD             NHYDsum=["KB-01B-S"], NHYDs to add=["KB-01B-MJ"+"KB-01B-MN"]
*%-----------------|-----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["KB-01C"], DT=[1]min, AREA=[13.78](ha), XIMP=[0.2045],
TIMP=[0.409], DWF=[0](cms), LOSS=[1]:
                    Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                    F=[0.00](mm),
                    Pervious   areas: IAper=[4.67](mm), SLPP=[2.0](%), LGP=[40](m),
                    MNP=[0.250], SCP=[0](min),
                    Impervious areas: IAimp=[0.785](mm), SLPI=[0.5](%),
                    LGI=[303.095](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                    END=-1
*%-----------------|-----------------------------------------------------------|
COMPUTE DUALHYD     NHYDin=["KB-01C"], CINLET=[1.35](cms), NINLET=[1],
                    MajNHYD=["KB-01C-MJ"]
                    MinNHYD=["KB-01C-MN"]
                    TMJSTO=[1880](cu-m)
*%-----------------|-----------------------------------------------------------|
ADD HYD             NHYDsum=["KB-01C-S"], NHYDs to add=["KB-01C-MJ"+"KB-01C-MN"]
*%-----------------|-----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["KB-03"], DT=[1]min, AREA=[84.78](ha), XIMP=[0.197],
TIMP=[0.394], DWF=[0](cms), LOSS=[1]:
                    Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                    F=[0.00](mm),
                    Pervious   areas: IAper=[4.67](mm), SLPP=[2.0](%), LGP=[40](m),
                    MNP=[0.250], SCP=[0](min),
                    Impervious areas: IAimp=[0.785](mm), SLPI=[0.63](%),
                    LGI=[751.798](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                    END=-1
*%-----------------|-----------------------------------------------------------|
COMPUTE DUALHYD     NHYDin=["KB-03"], CINLET=[5.27](cms), NINLET=[1],
                    MajNHYD=["KB-03-MJ"]
                    MinNHYD=["KB-03-MN"]
                    TMJSTO=[15500](cu-m)
*%-----------------|-----------------------------------------------------------|
ADD HYD             NHYDsum=["KB-03-S"], NHYDs to add=["KB-03-MJ"+"KB-03-MN"]
*%-----------------|-----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["KB-04"], DT=[1]min, AREA=[6.95](ha), XIMP=[0.85],
```

```
TIMP=[0.85], DWF=[0](cms), LOSS=[1]:
                    Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                    F=[0.00](mm),
                    Pervious   areas: IAper=[4.67](mm), SLPP=[2.0](%), LGP=[40](m),
                    MNP=[0.250], SCP=[0](min),
                    Impervious areas: IAimp=[0.942](mm), SLPI=[0.5](%),
                    LGI=[215.252](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                    END=-1
*%-----------------|-----------------------------------------------------------|
COMPUTE DUALHYD     NHYDin=["KB-04"], CINLET=[0.503](cms), NINLET=[1],
                    MajNHYD=["KB-04-MJ"]
                    MinNHYD=["KB-04-MN"]
                    TMJSTO=[1972](cu-m)
*%-----------------|-----------------------------------------------------------|
ADD HYD             NHYDsum=["KB-04-S"], NHYDs to add=["KB-04-MJ"+"KB-04-MN"]
*%-----------------|-----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["KB-05"], DT=[1]min, AREA=[5.19](ha), XIMP=[0.93],
TIMP=[0.93], DWF=[0](cms), LOSS=[1]:
                    Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                    F=[0.00](mm),
                    Pervious   areas: IAper=[4.67](mm), SLPP=[2.0](%), LGP=[40](m),
                    MNP=[0.250], SCP=[0](min),
                    Impervious areas: IAimp=[1.57](mm), SLPI=[0.5](%),
                    LGI=[186.011](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                    END=-1
*%-----------------|-----------------------------------------------------------|
*%-----------------|-----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["KB-06"], DT=[1]min, AREA=[12.93](ha), XIMP=[0.873],
TIMP=[0.873], DWF=[0](cms), LOSS=[1]:
                    Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                    F=[0.00](mm),
                    Pervious   areas: IAper=[4.67](mm), SLPP=[2.0](%), LGP=[40](m),
                    MNP=[0.250], SCP=[0](min),
                    Impervious areas: IAimp=[0.942](mm), SLPI=[4.75](%),
                    LGI=[293.598](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                    END=-1
*%-----------------|-----------------------------------------------------------|
COMPUTE DUALHYD     NHYDin=["KB-06"], CINLET=[2.262](cms), NINLET=[1],
                    MajNHYD=["KB-06-MJ"]
                    MinNHYD=["KB-06-MN"]
                    TMJSTO=[1950](cu-m)
*%-----------------|-----------------------------------------------------------|
ADD HYD             NHYDsum=["KB-06-S"], NHYDs to add=["KB-06-MJ"+"KB-06-MN"]
*%-----------------|-----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["KB-11"], DT=[1]min, AREA=[4.03](ha), XIMP=[0.675],
TIMP=[0.675], DWF=[0](cms), LOSS=[1]:
                    Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                    F=[0.00](mm),
                    Pervious   areas: IAper=[4.67](mm), SLPP=[2.0](%), LGP=[40](m),
                    MNP=[0.250], SCP=[0](min),
                    Impervious areas: IAimp=[0.785](mm), SLPI=[2.0](%),
                    LGI=[163.911](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                    END=-1
*%-----------------|-----------------------------------------------------------|
COMPUTE DUALHYD     NHYDin=["KB-11"], CINLET=[0.5773](cms), NINLET=[1],
                    MajNHYD=["KB-11-MJ"]
                    MinNHYD=["KB-11-MN"]
                    TMJSTO=[597](cu-m)
```

```
*%-----------------|-----------------------------------------------------------|
ADD HYD             NHYDsum=["KB-11-S"], NHYDs to add=["KB-11-MJ"+"KB-11-MN"]
*%-----------------|-----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["S1"], DT=[1]min, AREA=[4.99](ha), XIMP=[0.93], TIMP=[0.93],
DWF=[0](cms), LOSS=[1]:
                    Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                    F=[0.00](mm),
                    Pervious   areas: IAper=[4.67](mm), SLPP=[2.0](%), LGP=[40](m),
                    MNP=[0.250], SCP=[0](min),
                    Impervious areas: IAimp=[1.57](mm), SLPI=[2.0](%),
                    LGI=[182.392](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                    END=-1
*%-----------------|-----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["KB-15"], DT=[1]min, AREA=[2.15](ha), XIMP=[0.79],
TIMP=[0.79], DWF=[0](cms), LOSS=[1]:
                    Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                    F=[0.00](mm),
                    Pervious   areas: IAper=[4.67](mm), SLPP=[2.0](%), LGP=[40](m),
                    MNP=[0.250], SCP=[0](min),
                    Impervious areas: IAimp=[0.157](mm), SLPI=[0.3](%),
                    LGI=[119.722](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                    END=-1
*%-----------------|-----------------------------------------------------------|
*%-----------------|-----------------------------------------------------------|
ADD HYD             NHYDsum=["KB-P1"], NHYDs to
add=["KB-01A-S"+"KB-01B-S"+"KB-01C-S"+"KB-03-S"+"KB-04-S"+"KB-05"+"KB-06-S"+"KB-11-S"+"KB
-15"+"S1"]
*%-----------------|-----------------------------------------------------------|
ROUTE RESERVOIR     NHYDout=["KB-P1R"],  NHYDin=["KB-P1"],
                    RDT=[1](min),
                          TABLE of ( OUTFLOW-STORAGE ) values
                                        (cms) - (ha-m)
                                      [   0.0 ,  0.0 ]
                                      [0.076,0.003]
                                      [0.088,0.006]
                                      [0.136,0.011]
                                      [0.301,0.017]
                                      [0.454,0.027]
                                      [0.631,0.041]
                                      [1.173,0.068]
                                      [1.91,0.111]
                                      [4.847,0.231]
                                      [9.813,0.436]
                                      [12.134,0.617]
                                      [12.438,0.732]
                                      [12.424,0.811]
                                      [12.425,0.894]
                                      [   -1  ,  -1  ]  (max twenty pts)
                          NHYDovf=["KB-P1ovf"]
*%-----------------|-----------------------------------------------------------|
ADD HYD             NHYDsum=["KB-Pond1"], NHYDs to add=["KB-P1R"+"KB-P1ovf"]
*%-----------------|-----------------------------------------------------------|
SAVE HYD            NHYD=["KB-Pond1"],   # OF PCYCLES=[-1],  ICASEsh=[1]
                    HYD_COMMENT=["Total Flows at KB first pond"]
*%-----------------|-----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["KB-07"], DT=[1]min, AREA=[10.86](ha), XIMP=[0.86],
TIMP=[0.86], DWF=[0](cms), LOSS=[1]:
                    Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                    F=[0.00](mm),
                    Pervious   areas: IAper=[4.67](mm), SLPP=[2.0](%), LGP=[40](m),
                    MNP=[0.250], SCP=[0](min),
                    Impervious areas: IAimp=[0.785](mm), SLPI=[2.0](%),
```

```
                        LGI=[269.072](m), MNI=[0.013], SCI=[0](min),
                        Continuous simulation parameters:
                        IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                        END=-1
*%-----------------|-----------------------------------------------------------|
COMPUTE DUALHYD         NHYDin=["KB-07"], CINLET=[2.094](cms), NINLET=[1],
                        MajNHYD=["KB-07-MJ"]
                        MinNHYD=["KB-07-MN"]
                        TMJSTO=[1378](cu-m)
*%-----------------|-----------------------------------------------------------|
ADD HYD                 NHYDsum=["KB-07-S"], NHYDs to add=["KB-07-MJ"+"KB-07-MN"]
*%-----------------|-----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["KB-08"], DT=[1]min, AREA=[6.61](ha), XIMP=[0.64],
TIMP=[0.64], DWF=[0](cms), LOSS=[1]:
                        Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                        F=[0.00](mm),
                        Pervious   areas: IAper=[4.67](mm), SLPP=[2.0](%), LGP=[40](m),
                        MNP=[0.250], SCP=[0](min),
                        Impervious areas: IAimp=[0.785](mm), SLPI=[2.0](%),
                        LGI=[209.921](m), MNI=[0.013], SCI=[0](min),
                        Continuous simulation parameters:
                        IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                        END=-1
*%-----------------|-----------------------------------------------------------|
COMPUTE DUALHYD         NHYDin=["KB-08"], CINLET=[1.058](cms), NINLET=[1],
                        MajNHYD=["KB-08-MJ"]
                        MinNHYD=["KB-08-MN"]
                        TMJSTO=[787](cu-m)
*%-----------------|-----------------------------------------------------------|
ADD HYD                 NHYDsum=["KB-08-S"], NHYDs to add=["KB-08-MJ"+"KB-08-MN"]
*%-----------------|-----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["KB-09"], DT=[1]min, AREA=[2.6](ha), XIMP=[0.86],
TIMP=[0.86], DWF=[0](cms), LOSS=[1]:
                        Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                        F=[0.00](mm),
                        Pervious   areas: IAper=[4.67](mm), SLPP=[2.0](%), LGP=[40](m),
                        MNP=[0.250], SCP=[0](min),
                        Impervious areas: IAimp=[1.57](mm), SLPI=[2.0](%),
                        LGI=[131.656](m), MNI=[0.013], SCI=[0](min),
                        Continuous simulation parameters:
                        IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                        END=-1
*%-----------------|-----------------------------------------------------------|
*%-----------------|-----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["KB-10_1"], DT=[1]min, AREA=[2.37](ha),  XIMP=[0.86],
TIMP=[0.86], DWF=[0](cms), LOSS=[1]:
                        Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                        F=[0.00](mm),
                        Pervious   areas: IAper=[4.67](mm), SLPP=[2.0](%), LGP=[40](m),
                        MNP=[0.250], SCP=[0](min),
                        Impervious areas: IAimp=[1.57](mm), SLPI=[2.0](%),
                        LGI=[125.698](m), MNI=[0.013], SCI=[0](min),
                        Continuous simulation parameters:
                        IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                        END=-1
*%-----------------|-----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["KB-10_2"], DT=[1]min, AREA=[1.14](ha), XIMP=[0.86],
TIMP=[0.86], DWF=[0](cms), LOSS=[1]:
                        Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                        F=[0.00](mm),
                        Pervious   areas: IAper=[4.67](mm), SLPP=[2.0](%), LGP=[40](m),
                        MNP=[0.250], SCP=[0](min),
                        Impervious areas: IAimp=[1.57](mm), SLPI=[2.0](%), LGI=[87.178](m),
                        MNI=[0.013], SCI=[0](min),
                        Continuous simulation parameters:
                        IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
```

```
                          END=-1
*%-----------------|-------------------------------------------------------------|
*%-----------------|-------------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["KB-12"], DT=[1]min, AREA=[4.86](ha), XIMP=[0.79],
TIMP=[0.79], DWF=[0](cms), LOSS=[1]:
                    Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                    F=[0.00](mm),
                    Pervious   areas: IAper=[4.67](mm), SLPP=[2.0](%), LGP=[40](m),
                    MNP=[0.250], SCP=[0](min),
                    Impervious areas: IAimp=[1.099](mm), SLPI=[2.0](%),
                    LGI=[180.000](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                    END=-1
*%-----------------|-------------------------------------------------------------|
COMPUTE DUALHYD     NHYDin=["KB-12"], CINLET=[0.8665](cms), NINLET=[1],
                    MajNHYD=["KB-12-MJ"]
                    MinNHYD=["KB-12-MN"]
                    TMJSTO=[632](cu-m)
*%-----------------|-------------------------------------------------------------|
ADD HYD             NHYDsum=["KB-12-S"], NHYDs to add=["KB-12-MJ"+"KB-12-MN"]
*%-----------------|-------------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["KB-13"], DT=[1]min, AREA=[10.19](ha), XIMP=[0.64],
TIMP=[0.64], DWF=[0](cms), LOSS=[1]:
                    Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                    F=[0.00](mm),
                    Pervious   areas: IAper=[4.67](mm), SLPP=[2.0](%), LGP=[40](m),
                    MNP=[0.250], SCP=[0](min),
                    Impervious areas: IAimp=[0.785](mm), SLPI=[2.0](%),
                    LGI=[260.640](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                    END=-1
*%-----------------|-------------------------------------------------------------|
COMPUTE DUALHYD     NHYDin=["KB-13"], CINLET=[1.722](cms), NINLET=[1],
                    MajNHYD=["KB-13-MJ"]
                    MinNHYD=["KB-13-MN"]
                    TMJSTO=[1077](cu-m)
*%-----------------|-------------------------------------------------------------|
ADD HYD             NHYDsum=["KB-13-S"], NHYDs to add=["KB-13-MJ"+"KB-13-MN"]
*%-----------------|-------------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["KB-14"], DT=[1]min, AREA=[5.47](ha), XIMP=[0.64],
TIMP=[0.64], DWF=[0](cms), LOSS=[1]:
                    Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                    F=[0.00](mm),
                    Pervious   areas: IAper=[4.67](mm), SLPP=[2.0](%), LGP=[40](m),
                    MNP=[0.250], SCP=[0](min),
                    Impervious areas: IAimp=[0.785](mm), SLPI=[2.0](%),
                    LGI=[190.962](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                    END=-1
*%-----------------|-------------------------------------------------------------|
COMPUTE DUALHYD     NHYDin=["KB-14"], CINLET=[0.8734](cms), NINLET=[1],
                    MajNHYD=["KB-14-MJ"]
                    MinNHYD=["KB-14-MN"]
                    TMJSTO=[631](cu-m)
*%-----------------|-------------------------------------------------------------|
ADD HYD             NHYDsum=["KB-14-S"], NHYDs to add=["KB-14-MJ"+"KB-14-MN"]
*%-----------------|-------------------------------------------------------------|
*%-----------------|-------------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["KB-16_2"], DT=[1]min, AREA=[3.42](ha), XIMP=[0.71],
TIMP=[0.71], DWF=[0](cms), LOSS=[1]:
                    Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                    F=[0.00](mm),
                    Pervious   areas: IAper=[4.67](mm), SLPP=[2.0](%), LGP=[40](m),
```

```
                    MNP=[0.250], SCP=[0](min),
                    Impervious areas: IAimp=[0.157](mm), SLPI=[0.3](%),
                    LGI=[150.997](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                    END=-1
*%-----------------|------------------------------------------------------------|
ADD HYD             NHYDsum=["KB-P2"], NHYDs to
add=["KB-Pond1"+"KB-07-S"+"KB-08-S"+"KB-09"+"KB-10_1"+"KB-10_2"+"KB-12-S"+"KB-13-S"+"KB-1
4-S"+"KB-16_2"]
*%-----------------|------------------------------------------------------------|
ROUTE RESERVOIR     NHYDout=["KB-P2R"],  NHYDin=["KB-P2"],
                    RDT=[1](min),
                          TABLE of ( OUTFLOW-STORAGE ) values
                                        (cms) - (ha-m)
                                      [   0.0 ,  0.0 ]
                                      [0.053,0.005]
                                      [0.132,0.009]
                                      [0.269,0.014]
                                      [0.455,0.023]
                                      [0.699,0.037]
                                      [0.947,0.056]
                                      [1.853,0.09]
                                      [2.712,0.146]
                                      [6.626,0.287]
                                      [11.228,0.515]
                                      [14.885,0.738]
                                      [16.473,0.893]
                                      [17.311,0.998]
                                      [17.633,1.063]
                                      [17.634,1.112]
                                      [   -1  ,  -1  ]  (max twenty pts)
                          NHYDovf=["KB-P2ovf"]
*%-----------------|------------------------------------------------------------|
ADD HYD             NHYDsum=["KB-Pond2"], NHYDs to add=["KB-P2R"+"KB-P2ovf"]
*%-----------------|------------------------------------------------------------|
SAVE HYD            NHYD=["KB-Pond2"],   # OF PCYCLES=[-1],  ICASEsh=[1]
                    HYD_COMMENT=["Total Flows at KB second pond"]
*%-----------------|------------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["KB-16_1"], DT=[1]min, AREA=[2.8](ha), XIMP=[0.75],
TIMP=[0.75], DWF=[0](cms), LOSS=[1]:
                    Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                    F=[0.00](mm),
                    Pervious   areas: IAper=[4.67](mm), SLPP=[2.0](%), LGP=[40](m),
                    MNP=[0.250], SCP=[0](min),
                    Impervious areas: IAimp=[0.157](mm), SLPI=[0.3](%),
                    LGI=[136.626](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                    END=-1
*%-----------------|------------------------------------------------------------|
ADD HYD             NHYDsum=["KB-P3"], NHYDs to add=["KB-Pond2"+"KB-16_1"]
*%-----------------|------------------------------------------------------------|
*%-----------------|------------------------------------------------------------|
* One inflow node from pond 3 is added to the model (ROUTE RESERVOIR)
* Another inflow node from right side of pond 3 is not added to the model
ROUTE RESERVOIR     NHYDout=["KB-P3R"],  NHYDin=["KB-P3"],
                    RDT=[1](min),
                          TABLE of ( OUTFLOW-STORAGE ) values
                                        (cms) - (ha-m)
                                      [   0.0 ,  0.0 ]
                                      [0.051,0.002]
                                      [0.048,0.003]
                                      [0.057,0.029]
                                      [0.089,0.045]
                                      [0.133,0.069]
```

```
                                    [0.199,0.106]
                                    [0.321,0.172]
                                    [1.029,0.306]
                                    [4.036,0.527]
                                    [8.332,0.761]
                                    [11.727,0.941]
                                    [14.125,1.067]
                                    [15.675,1.149]
                                    [16.555,1.196]
                                    [16.911,1.214]
                                    [   -1  ,  -1  ]   (max twenty pts)
                          NHYDovf=["KB-P3ovf"]
*%-----------------|-----------------------------------------------------------|
ADD HYD              NHYDsum=["KB-Pond3"], NHYDs to add=["KB-P3R"+"KB-P3ovf"]
*%-----------------|-----------------------------------------------------------|
SAVE HYD             NHYD=["KB-Pond3"],   # OF PCYCLES=[-1],  ICASEsh=[1]
                     HYD_COMMENT=["Total Flows at KB third pond"]
*%-----------------|-----------------------------------------------------------|
*#******************************************************************************
*#    EXISTING / PROPOSED Subcatchments (Kennedy-Burnett SWM Facility (118080), SWM Modeling Approach, NOVATECH Report June, 2020)
*#    - TO FRASER-CLARKE DRAIN
*#******************************************************************************
CONTINUOUS STANDHYD NHYD=["FC-01"], DT=[1]min, AREA=[8.03](ha), XIMP=[0.47], TIMP=[0.47], DWF=[0](cms), LOSS=[1]:
                     Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr), F=[0.00](mm),
                     Pervious   areas: IAper=[4.67](mm), SLPP=[2.0](%), LGP=[40](m), MNP=[0.250], SCP=[0](min),
                     Impervious areas: IAimp=[1.57](mm), SLPI=[1.0](%), LGI=[231.373](m), MNI=[0.013], SCI=[0](min),
                     Continuous simulation parameters:
                     IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs), END=-1
*%-----------------|-----------------------------------------------------------|
COMPUTE DUALHYD      NHYDin=["FC-01"], CINLET=[0.756](cms), NINLET=[1],
                     MajNHYD=["FC-01-MJ"]
                     MinNHYD=["FC-01-MN"]
                     TMJSTO=[714](cu-m)
*%-----------------|-----------------------------------------------------------|
ADD HYD              NHYDsum=["FC-01-S"], NHYDs to add=["FC-01-MJ"+"FC-01-MN"]
*%-----------------|-----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["FC-02"], DT=[1]min, AREA=[16.05](ha), XIMP=[0.93], TIMP=[0.93], DWF=[0](cms), LOSS=[1]:
                     Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr), F=[0.00](mm),
                     Pervious   areas: IAper=[4.67](mm), SLPP=[2.0](%), LGP=[40](m), MNP=[0.250], SCP=[0](min),
                     Impervious areas: IAimp=[1.57](mm), SLPI=[1.0](%), LGI=[327.109](m), MNI=[0.013], SCI=[0](min),
                     Continuous simulation parameters:
                     IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs), END=-1
*%-----------------|-----------------------------------------------------------|
COMPUTE DUALHYD      NHYDin=["FC-02"], CINLET=[1.159](cms), NINLET=[1],
                     MajNHYD=["FC-02-MJ"]
                     MinNHYD=["FC-02-MN"]
                     TMJSTO=[2385](cu-m)
*%-----------------|-----------------------------------------------------------|
ADD HYD              NHYDsum=["FC-02-S"], NHYDs to add=["FC-02-MJ"+"FC-02-MN"]
*%-----------------|-----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["FC-03"], DT=[1]min, AREA=[7.37](ha), XIMP=[0.64], TIMP=[0.64], DWF=[0](cms), LOSS=[1]:
                     Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr), F=[0.00](mm),
                     Pervious   areas: IAper=[4.67](mm), SLPP=[2.0](%), LGP=[40](m),
```

```
                        MNP=[0.250], SCP=[0](min),
                        Impervious areas: IAimp=[1.57](mm), SLPI=[1.0](%),
                        LGI=[221.660](m), MNI=[0.013], SCI=[0](min),
                        Continuous simulation parameters:
                        IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                        END=-1
*%-----------------|-----------------------------------------------------------|
COMPUTE DUALHYD         NHYDin=["FC-03"], CINLET=[0.358](cms), NINLET=[1],
                        MajNHYD=["FC-03-MJ"]
                        MinNHYD=["FC-03-MN"]
                        TMJSTO=[1131](cu-m)
*%-----------------|-----------------------------------------------------------|
ADD HYD                 NHYDsum=["FC-03-S"], NHYDs to add=["FC-03-MJ"+"FC-03-MN"]
*%-----------------|-----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["FC-04"], DT=[1]min, AREA=[12.87](ha), XIMP=[0.64],
TIMP=[0.64], DWF=[0](cms), LOSS=[1]:
                        Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                        F=[0.00](mm),
                        Pervious   areas: IAper=[4.67](mm), SLPP=[2.0](%), LGP=[40](m),
                        MNP=[0.250], SCP=[0](min),
                        Impervious areas: IAimp=[1.57](mm), SLPI=[1.0](%),
                        LGI=[292.916](m), MNI=[0.013], SCI=[0](min),
                        Continuous simulation parameters:
                        IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                        END=-1
*%-----------------|-----------------------------------------------------------|
COMPUTE DUALHYD         NHYDin=["FC-04"], CINLET=[0.741](cms), NINLET=[1],
                        MajNHYD=["FC-04-MJ"]
                        MinNHYD=["FC-04-MN"]
                        TMJSTO=[1794](cu-m)
*%-----------------|-----------------------------------------------------------|
ADD HYD                 NHYDsum=["FC-04-S"], NHYDs to add=["FC-04-MJ"+"FC-04-MN"]
*%-----------------|-----------------------------------------------------------|
*#****************************************************************************
*#    PROPOSED Subcatchments (Kennedy-Burnett SWM Facility (118080), SWM Modeling
Approach, NOVATECH Report June, 2020)
*#    - TO JOCK RIVER
*#****************************************************************************
CONTINUOUS STANDHYD NHYD=["JR-01"], DT=[1]min, AREA=[8.24](ha), XIMP=[0.64],
TIMP=[0.64], DWF=[0](cms), LOSS=[1]:
                        Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                        F=[0.00](mm),
                        Pervious   areas: IAper=[4.67](mm), SLPP=[2.0](%), LGP=[40](m),
                        MNP=[0.250], SCP=[0](min),
                        Impervious areas: IAimp=[1.57](mm), SLPI=[1.0](%),
                        LGI=[234.379](m), MNI=[0.013], SCI=[0](min),
                        Continuous simulation parameters:
                        IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                        END=-1
*%-----------------|-----------------------------------------------------------|
COMPUTE DUALHYD         NHYDin=["JR-01"], CINLET=[0.563](cms), NINLET=[1],
                        MajNHYD=["JR-01-MJ"]
                        MinNHYD=["JR-01-MN"]
                        TMJSTO=[1040](cu-m)
*%-----------------|-----------------------------------------------------------|
ADD HYD                 NHYDsum=["JR-01-S"], NHYDs to add=["JR-01-MJ"+"JR-01-MN"]
*%-----------------|-----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["JR-02"], DT=[1]min, AREA=[1.59](ha), XIMP=[0.64],
TIMP=[0.64], DWF=[0](cms), LOSS=[1]:
                        Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                        F=[0.00](mm),
                        Pervious   areas: IAper=[4.67](mm), SLPP=[2.0](%), LGP=[40](m),
                        MNP=[0.250], SCP=[0](min),
                        Impervious areas: IAimp=[1.57](mm), SLPI=[1.0](%),
                        LGI=[102.956](m), MNI=[0.013], SCI=[0](min),
                        Continuous simulation parameters:
```

```
                        IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                        END=-1
*%-----------------|-------------------------------------------------------------|
COMPUTE DUALHYD         NHYDin=["JR-02"], CINLET=[0.153](cms), NINLET=[1],
                        MajNHYD=["JR-02-MJ"]
                        MinNHYD=["JR-02-MN"]
                        TMJSTO=[153](cu-m)
*%-----------------|-------------------------------------------------------------|
ADD HYD                 NHYDsum=["JR-02-S"], NHYDs to add=["JR-02-MJ"+"JR-02-MN"]
*%-----------------|-------------------------------------------------------------|
*#*******************************************************************************
*#     Catchment FRASER
*#     - To Fraser-Clarke drain (north of the Jock)
*#     - Developed land with assumed 43% imp.
*#     - 2020-12-17 Change Fraser area to be 35.1 as measured from QGIS
*#     - 2020-12-17 All Fraser is undeveloped (Nashyd)
*#*******************************************************************************
CONTINUOUS NASHYD       NHYD=["FRASER-DRN"], DT=[1]min, AREA=[13.65](ha),
                        DWF=[0](cms), CN/C=[77],  IA=[4.67](mm),
                        N=[3], TP=[0.4258]hrs,
                        Continuous simulation parameters:
                        IaRECper=[4](hrs),
                        SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                        InterEventTime=[12](hrs)
                        Baseflow simulation parameters:
                        BaseFlowOption=[1] ,
                        InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                        VHydCond=[0.055](mm/hr),   END=-1
*
CONTINUOUS STANDHYD NHYD=["FRASER-D"], DT=[1]min, AREA=[21.61](ha),
                        XIMP=[0.585], TIMP=[0.585], DWF=[0](cms), LOSS=[2],
                        SCS curve number CN=[80],
                        Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                                LGP=[40](m), MNP=[0.25], SCP=[0](min),
                        Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
                                LGI=[379.561](m), MNI=[0.013], SCI=[0](min),
                        Continuous simulation parameters:
                        IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                        SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                        InterEventTime=[18](hrs),   END=-1
*%-----------------|-------------------------------------------------------------|
COMPUTE DUALHYD         NHYDin=["FRASER-D"], CINLET=[2.281](cms), NINLET=[1],
                        MajNHYD=["FRASER-J"]
                        MinNHYD=["FRASER-N"]
                        TMJSTO=[9999999](cu-m)
*%-----------------|-------------------------------------------------------------|
ADD HYD                 NHYDsum=["FRASER-S"], NHYDs to add=["FRASER-J"+"FRASER-N"]
*%-----------------|-------------------------------------------------------------|
*ROUTE RESERVOIR         NHYDout=["MS_P20"],  NHYDin=["FRASER"],
*                        RDT=[1](min),
*                              TABLE of ( OUTFLOW-STORAGE ) values
*                                          (cms) - (ha-m)
*                                        [   0.0 ,  0.0 ]
*                                        [   0.04 , 0.36]
*                                        [   -1  ,  -1  ]  (max twenty pts)
*                              NHYDovf=["P20-OVF"]
*%-----------------|-------------------------------------------------------------|
ADD HYD                 NHYDsum=["4241"], NHYDs to
add=["KB-Pond3"+"S-1-B"+"FRASER-DRN"+"FRASER-S"+"N_KB"+"FC-01-S"+"FC-02-S"+"FC-03-S"]
*%-----------------|-------------------------------------------------------------|
SAVE HYD                NHYD=["4241"],   # OF PCYCLES=[-1],  ICASEsh=[1]
                        HYD_COMMENT=["Total Flows at Ken-Burnett Outlet"]
*%-----------------|-------------------------------------------------------------|
*# Hydrograph from Node Ken-Burnett to station 3633
*# Channel X-Section obtained from RVCA Hydraulic Model - Station 4241
*#
```

```
ROUTE CHANNEL        NHYDout=["4241-out"], NHYDin=["4241"],  RDT=[1](min),
                     CHLGTH=[294](m),  CHSLOPE=[0.1088](%), FPSLOPE=[0.1088](%),
                     SECNUM=[1.0],       NSEG=[3]
                     ( SEGROUGH, SEGDIST (m))=[0.05, -20.12
                                               -0.035, 45.26
                                                0.05, 403.84] NSEG times
                     ( DISTANCE (m), ELEVATION (m))=[]
                     [-909.72, 95 ]
                     [-907.09, 94.5 ]
                     [-904.65, 94 ]
                     [-902.26, 93.5 ]
                     [-44.51, 91.5 ]
                     [-25.1, 91.5 ]
                     [-20.98, 91 ]
                     [-20.61, 90.5 ]
                     [-20.12, 90 ]
                     [-6.13, 87.26 ]
                     [17.51, 86.56 ]
                     [31.37, 87.2 ]
                     [45.26, 90 ]
                     [50.41, 90.5 ]
                     [63.06, 91 ]
                     [134.5, 91.5 ]
                     [190.63, 92 ]
                     [251.98, 92.5 ]
                     [321.32, 93.5 ]
                     [403.84, 95 ]
*%-----------------|-------------------------------------------------------------|
ADD HYD              NHYDsum=["SN_KB"], NHYDs to
add=["4241-out"+"FC-04-S"+"JR-01-S"+"JR-02-S"]
*%-----------------|-------------------------------------------------------------|
SAVE HYD             NHYD=["SN_KB"],   # OF PCYCLES=[-1],  ICASEsh=[1]
                     HYD_COMMENT=["Total Flows before Station 3633]
*%-----------------|-------------------------------------------------------------|
*# Hydrograph from Station 3633 to Node Todd
*# Channel X-Section obtained from RVCA Hydraulic Model - Station 3633
*# JFSA 2021-02-26 change the channel length (at station 3633) from 650m to 608m and
change the slope from 0.0498% to 0.24671%. That is because of adding station 4241
between station 4534 and  station 3633
*#
ROUTE CHANNEL        NHYDout=["N_TO"], NHYDin=["SN_KB"],  RDT=[1](min),
                     CHLGTH=[608](m),  CHSLOPE=[0.24671](%), FPSLOPE=[0.24671](%),
                     SECNUM=[1.0],       NSEG=[3]
                     ( SEGROUGH, SEGDIST (m))=[0.05, -23.74
                                               -0.035, 23.74
                                                0.05, 26.50] NSEG times
                     ( DISTANCE (m), ELEVATION (m))=[]
                     -29.24, 91.0
                     -27.41, 90.5
                     -25.64, 90
                     -23.74, 89.5
                     -22, 89.26
                     -20, 88.51
                     -19, 88.32
                     -15, 88.1
                     -10, 88.11
                     -5, 88.17
                     0, 88.27
                     5, 88.19
                     10, 88.06
                     15, 88.48
                     16, 88.7
                     23.74, 89.5
                     24.68, 90
                     25.57, 90.5
                     26.50, 91.0
```

```
*                                       [-29.24, 91]
*                                       [-27.41, 90.5]
*                                       [-25.64, 90]
*                                       [-23.74, 89.5]
*                                       [-22, 89. 26]
*                                       [-20, 88.51]
*                                       [-19, 88.32]
*                                       [-15, 88.1]
*                                       [-10, 88.11]
*                                       [-5, 88.17]
*                                       [0, 88.27]
*                                       [5, 88.19]
*                                       [10, 88.06]
*                                       [15, 88.48]
*                                       [16, 88.7]
*                                       [23.74, 89.5]
*                                       [24.68, 90]
*                                       [25.57, 90.5]
*%-----------------|-----------------------------------------------------------|
*#*****************************************************************************
*#    Catchment Greenbank
*#    - To Greenbank Drain (south of the Jock)
*#    - JFSA 2021-01-18 add Greenbank pond as per JFSA, P598(06)-15, June 2016
*#    - JFSA 2021-01-19 update area from 37.479 ha to 36.6 ha based on GIS measurements
*#*****************************************************************************
CONTINUOUS STANDHYD NHYD=["Greenbank"], DT=[1]min, AREA=[36.6](ha),
                    XIMP=[0.639], TIMP=[0.682], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[77],
                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
                            LGI=[493.96](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[18](hrs),   END=-1
*%-----------------|-----------------------------------------------------------|
ROUTE RESERVOIR     NHYDout=["GreenB_MN"] ,NHYDin=["Greenbank"] ,
                    RDT=[1](min),
                          TABLE of ( OUTFLOW-STORAGE ) values
                                      (cms) - (ha-m)
                                    [    0.0 , 0.0     ]
                                    [ 0.033 , 0.084 ]
                                    [ 0.039 , 0.201 ]
                                    [ 0.113 , 0.292 ]
                                    [ 0.237 , 0.386 ]
                                    [ 0.382 , 0.484 ]
                                    [ 0.539 , 0.585 ]
                                    [ 0.7 , 0.692 ]
                                    [ 0.86 , 0.804 ]
                                    [ 4.684 , 0.922 ]
                                    [ 11.539 , 1.052 ]
                                    [ 20.867 , 1.168 ]
                                    [ 103.616 , 1.974 ]
                                    [    -1  ,  -1    ]  (max twenty pts)
                          NHYDovf=["GreenB_MJ"] ,
*%-----------------|-----------------------------------------------------------|
*%-----------------|-----------------------------------------------------------|
ADD HYD             NHYDsum=["GreenB"], NHYDs to add=["N_TO"+"GreenB_MJ"+"GreenB_MN"]
*%-----------------|-----------------------------------------------------------|
SAVE HYD            NHYD=["GreenB"],   # OF PCYCLES=[-1],  ICASEsh=[1]
                    HYD_COMMENT=["Total Flows at Greenbank Drain"]
*%-----------------|-----------------------------------------------------------|
*#*****************************************************************************
*#    Catchment TODD
*#    - To Todd Drain (south of the Jock)
```

```
*#    - Subdivision with 43% imp. as per Barrhaven South MSS
*#    - 2020-11-30 increase imp. based on P598(04)-11
*#    - 2020-11-30 update TODD Tributary Drainage Area to  = 146.015 ha based on P598(04)-11
*#    - 2020-11-30 split TODD Drainage Area to MAJOR, MINOR, POND and ALL
*#*****************************************************************************
*#    - JFSA 2021-01-19 add "TODD_MN1" as part of Clarke("W_CLAR_MJ") and remove it from Todd
*CONTINUOUS STANDHYD NHYD=["TODD_MN1"], DT=[1]min, AREA=[1.772](ha),
*                    XIMP=[0.53], TIMP=[0.57], DWF=[0](cms), LOSS=[2],
*                    SCS curve number CN=[77],
*                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
*                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
*                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
*                            LGI=[108.689](m), MNI=[0.013], SCI=[0](min),
*                    Continuous simulation parameters:
*                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
*                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                    InterEventTime=[18](hrs),   END=-1
*%-----------------|-----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["TODD_MN2"], DT=[1]min, AREA=[2.1](ha),
                    XIMP=[0.53], TIMP=[0.57], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[77],
                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
                            LGI=[118.322](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[18](hrs),   END=-1
*%-----------------|-----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["TODD_MN3"], DT=[1]min, AREA=[0.117](ha),
                    XIMP=[0.53], TIMP=[0.57], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[77],
                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
                            LGI=[27.928](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[18](hrs),   END=-1
*%-----------------|-----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["TODD_MJ"], DT=[1]min, AREA=[30.230](ha),
                    XIMP=[0.52], TIMP=[0.64], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[77],
                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
                            LGI=[448.925](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[18](hrs),   END=-1
*%-----------------|-----------------------------------------------------------|
*     -JFSA, 2021-01-19  update "TODD_ALL" area from 108.741 ha to 112.908 ha based on GIS measurements (148.41-30.23-0.117-2.1-3.055=112.908 ha)
CONTINUOUS STANDHYD NHYD=["TODD_ALL"], DT=[1]min, AREA=[112.908](ha),
                    XIMP=[0.52], TIMP=[0.57], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[77],
                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
                            LGI=[867.594](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
```

```
                        IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                        SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                        InterEventTime=[18](hrs),   END=-1
*%-----------------|-----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["TODD_P"], DT=[1]min, AREA=[3.055](ha),
                        XIMP=[0.63], TIMP=[0.63], DWF=[0](cms), LOSS=[2],
                        SCS curve number CN=[77],
                        Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                                LGP=[40](m), MNP=[0.25], SCP=[0](min),
                        Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
                                LGI=[142.712](m), MNI=[0.013], SCI=[0](min),
                        Continuous simulation parameters:
                        IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                        SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                        InterEventTime=[18](hrs),   END=-1
*%-----------------|-----------------------------------------------------------|
*%-----------------|-----------------------------------------------------------|
*    -JFSA 2021-02-23 "TODD_DEVL" is part of the Corrigan sub-catchment because it drains to Corrigan SWM as per geoOttawa.ca Feb. 2021. "TODD_DEVL" now is called "corr1" and its parameters remain the same.
*CONTINUOUS STANDHYD NHYD=["TODD_DEVL"], DT=[1]min, AREA=[15.87](ha),
*                    XIMP=[0.63], TIMP=[0.63], DWF=[0](cms), LOSS=[2],
*                    SCS curve number CN=[77],
*                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
*                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
*                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
*                            LGI=[325.27](m), MNI=[0.013], SCI=[0](min),
*                    Continuous simulation parameters:
*                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
*                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                    InterEventTime=[18](hrs),   END=-1
*%-----------------|-----------------------------------------------------------|
*    -JFSA 2021-02-23 "TODD_UnD" is part of the Corrigan sub-catchment. "TODD_UnD" now is called "corr2" and its parameters remain the same.
*CONTINUOUS NASHYD   NHYD=["TODD_UnD"], DT=[1]min, AREA=[12.47](ha),
*                    DWF=[0](cms), CN/C=[77],  IA=[4.67](mm),
*                    N=[3], TP=[1.10]hrs,
*                    Continuous simulation parameters:
*                    IaRECper=[4](hrs),
*                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                    InterEventTime=[12](hrs)
*                    Baseflow simulation parameters:
*                    BaseFlowOption=[1] ,
*                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
*                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
*# 5-Year + 12% Capture
*COMPUTE DUALHYD     NHYDin=["TODD_MJ"], CINLET=[3.314](cms), NINLET=[1],
*                    MajNHYD=["TODD_MJj"]
*                    MinNHYD=["TODD_MJn"]
*                    TMJSTO=[0.1](cu-m)
ROUTE RESERVOIR     NHYDout=["TODD_MJn"] ,NHYDin=["TODD_MJ"] ,
                    RDT=[1](min),
                          TABLE of ( OUTFLOW-STORAGE ) values
                                      (cms) - (ha-m)
                                    [    0.0 , 0.0    ]
                                    [ 3.314  , 0.0001 ]
                                    [    -1  ,  -1    ]  (max twenty pts)
                          NHYDovf=["TODD_MJj"] ,
*%-----------------|-----------------------------------------------------------|
*# 5-Year + 12% Capture
*COMPUTE DUALHYD     NHYDin=["TODD_MN1"], CINLET=[0.227](cms), NINLET=[1],
*                    MajNHYD=["TODD_MN1j"]
*                    MinNHYD=["TODD_MN1n"]
*                    TMJSTO=[0.1](cu-m)
*ROUTE RESERVOIR     NHYDout=["TODD_MN1n"] ,NHYDin=["TODD_MN1"] ,
```

```
*                    RDT=[1](min),
*                          TABLE of ( OUTFLOW-STORAGE ) values
*                                      (cms) - (ha-m)
*                                    [    0.0 , 0.0    ]
*                                    [ 0.227  , 0.0001 ]
*                                    [    -1  ,  -1    ]  (max twenty pts)
*                          NHYDovf=["TODD_MN1j"] ,
*%-----------------|-----------------------------------------------------------|
*COMPUTE DUALHYD     NHYDin=["TODD_MN2"], CINLET=[0.268](cms), NINLET=[1],
*                    MajNHYD=["TODD_MN2j"]
*                    MinNHYD=["TODD_MN2n"]
*                    TMJSTO=[0.1](cu-m)
ROUTE RESERVOIR     NHYDout=["TODD_MN2n"] ,NHYDin=["TODD_MN2"] ,
                    RDT=[1](min),
                          TABLE of ( OUTFLOW-STORAGE ) values
                                      (cms) - (ha-m)
                                    [    0.0 , 0.0    ]
                                    [ 0.268  , 0.0001 ]
                                    [    -1  ,  -1    ]  (max twenty pts)
                          NHYDovf=["TODD_MN2j"] ,
*%-----------------|-----------------------------------------------------------|
*COMPUTE DUALHYD     NHYDin=["TODD_MN3"], CINLET=[0.016](cms), NINLET=[1],
*                    MajNHYD=["TODD_MN3j"]
*                    MinNHYD=["TODD_MN3n"]
*                    TMJSTO=[0.1](cu-m)
ROUTE RESERVOIR     NHYDout=["TODD_MN3n"] ,NHYDin=["TODD_MN3"] ,
                    RDT=[1](min),
                          TABLE of ( OUTFLOW-STORAGE ) values
                                      (cms) - (ha-m)
                                    [    0.0 , 0.0    ]
                                    [ 0.016  , 0.0001 ]
                                    [    -1  ,  -1    ]  (max twenty pts)
                          NHYDovf=["TODD_MN3j"] ,
*%-----------------|-----------------------------------------------------------|
*    -JFSA 2021-01-19 move A2 from Corrigan sub-catchment to Todd sub-catchment so the major system from A2 can be added to Todd
CONTINUOUS STANDHYD NHYD=["A2"], DT=[1]min, AREA=[25.5](ha),
                    XIMP=[0.42], TIMP=[0.52], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[75],
                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
                            LGI=[566](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[18](hrs),   END=-1
*%-----------------|-----------------------------------------------------------|
COMPUTE DUALHYD     NHYDin=["A2"], CINLET=[1.818](cms), NINLET=[1],
                    MajNHYD=["A2-MJ"]
                    MinNHYD=["A2-MN"]
                    TMJSTO=[924](cu-m)
*%-----------------|-----------------------------------------------------------|
ADD HYD             NHYDsum=["TODD"], NHYDs to add=["TODD_MN2n"+"TODD_MN3n"+"TODD_MJj"+"TODD_P"+"TODD_ALL"+"W_CLAR_MJn"]
*%-----------------|-----------------------------------------------------------|
SAVE HYD            NHYD=["TODD"],   # OF PCYCLES=[-1],  ICASEsh=[1]
                    HYD_COMMENT=["Total Flows at Todd Drain"]
*%-----------------|-----------------------------------------------------------|
*#******************************************************************************
*#    Todd Pond 3
*#    - Rating curve obtained from Barrhaven South MSS modeling
*#    - stantec 2007, Tributary Drainage Area to MSS Pond 3 = 193 ha
*#******************************************************************************
ROUTE RESERVOIR     NHYDout=["MS_P3"],  NHYDin=["TODD"],
                    RDT=[1](min),
```

```
                          TABLE of ( OUTFLOW-STORAGE ) values
                                    (cms) - (ha-m)
                                  [   0.0 ,  0.0 ]
                                  [ 0.014 , 0.155 ]
                                  [ 0.048 , 0.394 ]
                                  [ 0.061 , 0.56 ]
                                  [ 0.08 , 0.909 ]
                                  [ 0.088 , 1.089 ]
                                  [ 0.109 , 1.652 ]
                                  [ 0.118 , 1.952 ]
                                  [ 0.122 , 2.099 ]
                                  [ 1.972 , 2.269 ]
                                  [ 9.135 , 2.598 ]
                                  [ 15.608 , 2.826 ]
                                  [ 19.256 , 2.942 ]
                                  [ 27.282 , 3.181 ]
                                  [ 40.957 , 3.55 ]
                                  [ 56.372 , 3.929 ]
                                  [ 73.349 , 4.317 ]
                                  [ 85.469 , 4.579 ]
                                  [ 104.771 , 4.977 ]
                                  [   -1  ,  -1  ]  (max twenty pts)
                          NHYDovf=["P3-OVF"]
*%-------------------|------------------------------------------------------------|
ADD HYD                    NHYDsum=["SN_TO"], NHYDs to
add=["GreenB"+"MS_P3"+"P3-OVF"+"TODD_MN2j"+"A2-MJ"]
*%-------------------|------------------------------------------------------------|
SAVE HYD                   NHYD=["SN_TO"],   # OF PCYCLES=[-1],  ICASEsh=[1]
                           HYD_COMMENT=["Total Flows at Todd Drain"]
*%-------------------|------------------------------------------------------------|
*#
*# Hydrograph from Todd Drain routed to Corrigan Drain
*# Channel X-Section obtained from RVCA Hydraulic Model - Station 2462
*# 2021-02-19 Change the slope from 0.033 % (as per Stantec Report 2007) to 0.05 % so
the model will be more stable and give reasonable results. It is justifiable as ROUTE
CHANNELs aren't well suited to really flat slopes.
*
ROUTE CHANNEL              NHYDout=["N_TO"] ,NHYDin=["SN_TO"] ,
                           RDT=[1](min),
                           CHLGTH=[280](m),  CHSLOPE=[0.05](%),
                                               FPSLOPE=[0.05](%),
                           SECNUM=[1.0],       NSEG=[3]
                           ( SEGROUGH, SEGDIST (m))=
                             [0.075,-17.72
                             -0.045,17.72
                             0.075,80.62] NSEG times
                           ( DISTANCE (m), ELEVATION (m))=
                           [-83.32, 90.00]
                           [-81.36, 89.50]
                           [-79.12, 89.00]
                           [-76.13, 88.50]
                           [-20.46, 88.00]
                           [-19.36, 87.50]
                           [-18.51, 87.00]
                           [-17.72, 86.50]
                           [-11.95, 85.24]
                           [-0.11, 85.12]
                           [11.49, 85.20]
                           [17.72, 86.50]
                           [19.74, 87.00]
                           [21.22, 87.50]
                           [22.68, 88.00]
                           [24.28, 88.50]
                           [26.79, 89.00]
                           [71.98, 90.00]
                           [80.62, 90.50]
```

```
*%-----------------|-----------------------------------------------------------|
SAVE HYD            NHYD=["N_TO"],   # OF PCYCLES=[-1],  ICASEsh=[1]
                    HYD_COMMENT=["Total inflows at Station 2462"]
*%-----------------|-----------------------------------------------------------|
*#*****************************************************************************
*#    Catchment CORRIG
*#    - To Corrigan Drain (south of the Jock)
*#    - Primarily Developed (medium density)
*#    - JFSA JAN 2021, add Corrigan subcatchments as per IBI, July 2008
*#*****************************************************************************
*ROUTE RESERVOIR     NHYDout=["MS_P1"],  NHYDin=["CORRIG"],
*                    RDT=[1](min),
*                          TABLE of ( OUTFLOW-STORAGE ) values
*                                      (cms) - (ha-m)
*                                    [   0.0 ,  0.0 ]
*                                    [   0.06 , 0.58]
*                                    [   -1  ,  -1  ]  (max twenty pts)
*                          NHYDovf=["P1-OVF"]
*%-----------------|-----------------------------------------------------------|
*ADD HYD             NHYDsum=["SN_CO"], NHYDs to add=["N_TO"+"P1-OVF"+"MS_P1"]
*%-----------------|-----------------------------------------------------------|
*SAVE HYD            NHYD=["SN_CO"],   # OF PCYCLES=[-1],  ICASEsh=[1]
*                    HYD_COMMENT=["Total Flows at Corrigan Drain"]
*%-----------------|-----------------------------------------------------------|
*    -JFSA 2021-02-23 "TODD_DEVL" is part of the Corrigan sub-catchment because it drains to Corrigan SWM as per geoOttawa.ca Feb. 2021. "TODD_DEVL" now is called "corr1" and its parameters remain the same.
CONTINUOUS STANDHYD NHYD=["corr1"], DT=[1]min, AREA=[15.87](ha),
                    XIMP=[0.63], TIMP=[0.63], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[77],
                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
                            LGI=[325.27](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[18](hrs),   END=-1
*%-----------------|-----------------------------------------------------------|
*      -JFSA 2021-02-23 add DUALHYD for "corr1". "corr1" DUALHYD Parameters are the same as A2 DUALHYD Parameters because A2 is the nearest sub-catchment to "corr1".
*       At the same time, Corrigan Report, IBI group 2008 has no DUALHYD Parameters for A1-Corrig
COMPUTE DUALHYD     NHYDin=["corr1"], CINLET=[1.818](cms), NINLET=[1],
                    MajNHYD=["corr1-MJ"]
                    MinNHYD=["corr1-MN"]
                    TMJSTO=[924](cu-m)
*%-----------------|-----------------------------------------------------------|
*    -JFSA 2021-02-23 "TODD_UnD" is part of the Corrigan sub-catchment. "TODD_UnD" now is called "corr2" and its parameters remain the same.
CONTINUOUS NASHYD   NHYD=["corr2"], DT=[1]min, AREA=[12.47](ha),
                    DWF=[0](cms), CN/C=[77],  IA=[4.67](mm),
                    N=[3], TP=[1.10]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
*     -JFSA 2021-01-19 change A1-Corrig to be developed as per geoottawa website and apply the parameters of A2, the nearest sub-catchment to A1-Corrig, LGI is calculated based on A1-Corrig area
*     -JFSA 2021-01-19 update all Corrigan areas based on GIS measurements, and keep
```

```
LGI as it is from Corrigan Report, IBI Group, 2008 because LGI calculated is less than LGI from the Corrigan Report
CONTINUOUS STANDHYD NHYD=["A1-Corrig"], DT=[1]min, AREA=[15.75](ha),
                    XIMP=[0.42], TIMP=[0.52], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[75],
                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
                            LGI=[324.037](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[18](hrs),   END=-1
*
*      -JFSA 2021-01-25 add DUALHYD for A1-Corrig. A1-Corrig DUALHYD Parameters are the same as A2 DUALHYD Parameters because A2 is the nearest sub-catchment to A1-Corrig.
*       At the same time, Corrigan Report, IBI group 2008 has no DUALHYD Parameters for A1-Corrig
COMPUTE DUALHYD     NHYDin=["A1-Corrig"], CINLET=[1.818](cms), NINLET=[1],
                    MajNHYD=["A1-MJ"]
                    MinNHYD=["A1-MN"]
                    TMJSTO=[924](cu-m)
*%-----------------|-------------------------------------------------------------|
*CONTINUOUS NASHYD   NHYD=["A1-Corrig"], DT=[1]min, AREA=[15.75](ha),
*                    DWF=[0](cms),  CN/C=[66], IA=[2.5](mm),
*                    N=[3.0], TP=[0.36]hrs,
*                    Continuous simulation parameters:
*                    IaRECper=[4](hrs),
*                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                    InterEventTime=[12](hrs)
*                    Baseflow simulation parameters:
*                    BaseFlowOption=[1] ,
*                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
*                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-------------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["B1"], DT=[1]min, AREA=[2.77](ha),
                    DWF=[0](cms),  CN/C=[56], IA=[2.5](mm),
                    N=[3.0], TP=[0.23]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-------------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["A4"], DT=[1]min, AREA=[1.27](ha),
                    XIMP=[0.65], TIMP=[0.65], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[75],
                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
                            LGI=[253](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[18](hrs),   END=-1
*%-----------------|-------------------------------------------------------------|
COMPUTE DUALHYD     NHYDin=["A4"], CINLET=[0.405](cms), NINLET=[1],
                    MajNHYD=["A4-MJ"]
                    MinNHYD=["A4-MN"]
                    TMJSTO=[68](cu-m)
*%-----------------|-------------------------------------------------------------|
ADD HYD             NHYDsum=["MH101"], NHYDs to add=["A1-MJ"+"A1-MN"+"corr1-MJ"+"corr1-MN"+"corr2"+"B1"+"A4-MN"]
```

```
*%-----------------|----------------------------------------------------------|
SAVE HYD            NHYD=["MH101"],   # OF PCYCLES=[-1],  ICASEsh=[1]
                    HYD_COMMENT=["Total Flows at MH101"]
*%-----------------|----------------------------------------------------------|
ROUTE PIPE          PTYPE=[1]circ, NHYDout=["101-102"], RNUMBER=[1.0], PDIAM=[1050](mm),
                    PLNGTH=[368](m), PROUGH=[0.013], PSLOPE=[0.0054](m/m),
                    NHYDin=["MH101"], RDT=[1]
*%-----------------|----------------------------------------------------------|
*    -JFSA 2021-01-19 move A2 from Corrigan sub-catchment to Todd sub-catchment so the
major system from A2 can be added to Todd
*CONTINUOUS STANDHYD NHYD=["A2"], DT=[1]min, AREA=[25.5](ha),
*                    XIMP=[0.42], TIMP=[0.52], DWF=[0](cms), LOSS=[2],
*                    SCS curve number CN=[75],
*                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
*                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
*                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
*                            LGI=[566](m), MNI=[0.013], SCI=[0](min),
*                    Continuous simulation parameters:
*                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
*                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                    InterEventTime=[18](hrs),   END=-1
*%-----------------|----------------------------------------------------------|
*COMPUTE DUALHYD     NHYDin=["A2"], CINLET=[1.818](cms), NINLET=[1],
*                    MajNHYD=["A2-MJ"]
*                    MinNHYD=["A2-MN"]
*                    TMJSTO=[924](cu-m)
*%-----------------|----------------------------------------------------------|
ADD HYD             NHYDsum=["MH102"], NHYDs to add=["A2-MN"+"101-102"]
*%-----------------|----------------------------------------------------------|
SAVE HYD            NHYD=["MH102"],   # OF PCYCLES=[-1],  ICASEsh=[1]
                    HYD_COMMENT=["Total Flows at MH102"]
*%-----------------|----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["A5"], DT=[1]min, AREA=[1.6](ha),
                    XIMP=[0.71], TIMP=[0.71], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[75],
                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
                            LGI=[300](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[18](hrs),   END=-1
*%-----------------|----------------------------------------------------------|
ADD HYD             NHYDsum=["A5T"], NHYDs to add=["A4-MJ"+"A5"]
*%-----------------|----------------------------------------------------------|
COMPUTE DUALHYD     NHYDin=["A5T"], CINLET=[0.357](cms), NINLET=[1],
                    MajNHYD=["A5-MJ"]
                    MinNHYD=["A5-MN"]
                    TMJSTO=[60](cu-m)
*%-----------------|----------------------------------------------------------|
*   -JFSA Jan. 2021, A3 is a part of Todd so it is removed
*   -JFSA Jan. 2021, "A2-MJ" added to "Todd"
*CONTINUOUS STANDHYD NHYD=["A3"], DT=[1]min, AREA=[18.4](ha),
*                    XIMP=[0.58], TIMP=[0.65], DWF=[0](cms), LOSS=[2],
*                    SCS curve number CN=[75],
*                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
*                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
*                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
*                            LGI=[450](m), MNI=[0.013], SCI=[0](min),
*                    Continuous simulation parameters:
*                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
*                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                    InterEventTime=[18](hrs),   END=-1
*%-----------------|----------------------------------------------------------|
*ADD HYD             NHYDsum=["A3-A2MJ"], NHYDs to add=["A2-MJ"+"A3"]
```

```
*%-----------------|----------------------------------------------------------|
*COMPUTE DUALHYD     NHYDin=["A3-A2MJ"], CINLET=[2.208](cms), NINLET=[1],
*                    MajNHYD=["A3R-MJ"]
*                    MinNHYD=["A3R-MN"]
*                    TMJSTO=[908](cu-m)
*%-----------------|----------------------------------------------------------|
ROUTE PIPE          PTYPE=[1]circ, NHYDout=["102-103"], RNUMBER=[1.0], PDIAM=[1500](mm),
                    PLNGTH=[504](m), PROUGH=[0.013], PSLOPE=[0.0028](m/m),
                    NHYDin=["MH102"], RDT=[1]
*%-----------------|----------------------------------------------------------|
ADD HYD             NHYDsum=["MH103"], NHYDs to add=["102-103"+"A5-MN"]
*%-----------------|----------------------------------------------------------|
SAVE HYD            NHYD=["MH103"],   # OF PCYCLES=[-1],  ICASEsh=[1]
                    HYD_COMMENT=["Total Flows at MH103"]
*%-----------------|----------------------------------------------------------|
ROUTE PIPE          PTYPE=[1]circ, NHYDout=["103-104"], RNUMBER=[1.0], PDIAM=[1650](mm),
                    PLNGTH=[438](m), PROUGH=[0.013], PSLOPE=[0.0046](m/m),
                    NHYDin=["MH103"], RDT=[1]
*%-----------------|----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["A6"], DT=[1]min, AREA=[1.56](ha),
                    XIMP=[0.71], TIMP=[0.71], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[75],
                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
                            LGI=[280](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[18](hrs),   END=-1
*%-----------------|----------------------------------------------------------|
ADD HYD             NHYDsum=["A6T"], NHYDs to add=["A5-MJ"+"A6"]
*%-----------------|----------------------------------------------------------|
COMPUTE DUALHYD     NHYDin=["A6T"], CINLET=[0.357](cms), NINLET=[1],
                    MajNHYD=["A6-MJ"]
                    MinNHYD=["A6-MN"]
                    TMJSTO=[60](cu-m)
*%-----------------|----------------------------------------------------------|
*   -JFSA Jan. 2021, A7-corrig is a part of Todd so it is removed
*CONTINUOUS STANDHYD NHYD=["A7-corrig"], DT=[1]min, AREA=[11.8](ha),
*                    XIMP=[0.41], TIMP=[0.54], DWF=[0](cms), LOSS=[2],
*                    SCS curve number CN=[75],
*                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
*                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
*                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
*                            LGI=[438](m), MNI=[0.013], SCI=[0](min),
*                    Continuous simulation parameters:
*                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
*                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                    InterEventTime=[18](hrs),   END=-1
*%-----------------|----------------------------------------------------------|
*ADD HYD             NHYDsum=["A7-A3RMJ"], NHYDs to add=["A3R-MJ"+"A7-corrig"]
*%-----------------|----------------------------------------------------------|
*COMPUTE DUALHYD     NHYDin=["A7-A3RMJ"], CINLET=[1.003](cms), NINLET=[1],
*                    MajNHYD=["A7R-MJ"]
*                    MinNHYD=["A7R-MN"]
*                    TMJSTO=[496](cu-m)
*%-----------------|----------------------------------------------------------|
ADD HYD             NHYDsum=["MH104"], NHYDs to add=["A6-MN"+"103-104"+"TODD_MJn"]
*%-----------------|----------------------------------------------------------|
SAVE HYD            NHYD=["MH104"],   # OF PCYCLES=[-1],  ICASEsh=[1]
                    HYD_COMMENT=["Total Flows at MH104"]
*%-----------------|----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["B2"], DT=[1]min, AREA=[12.31](ha),
                    XIMP=[0.41], TIMP=[0.54], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[75],
```

```
                      Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                              LGP=[40](m), MNP=[0.25], SCP=[0](min),
                      Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
                              LGI=[417](m), MNI=[0.013], SCI=[0](min),
                      Continuous simulation parameters:
                      IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                      SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                      InterEventTime=[18](hrs),   END=-1
*%-----------------|-----------------------------------------------------------|
COMPUTE DUALHYD       NHYDin=["B2"], CINLET=[1.029](cms), NINLET=[1],
                      MajNHYD=["B2-MJ"]
                      MinNHYD=["B2-MN"]
                      TMJSTO=[508](cu-m)
*%-----------------|-----------------------------------------------------------|
ROUTE PIPE            PTYPE=[1]circ, NHYDout=["315-333"], RNUMBER=[1.0], PDIAM=[1200](mm),
                      PLNGTH=[254](m), PROUGH=[0.013], PSLOPE=[0.001](m/m),
                      NHYDin=["B2-MN"], RDT=[1]
*%-----------------|-----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["B3"], DT=[1]min, AREA=[5.59](ha),
                      XIMP=[0.41], TIMP=[0.54], DWF=[0](cms), LOSS=[2],
                      SCS curve number CN=[75],
                      Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                              LGP=[40](m), MNP=[0.25], SCP=[0](min),
                      Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
                              LGI=[345](m), MNI=[0.013], SCI=[0](min),
                      Continuous simulation parameters:
                      IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                      SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                      InterEventTime=[18](hrs),   END=-1
*%-----------------|-----------------------------------------------------------|
COMPUTE DUALHYD       NHYDin=["B3"], CINLET=[0.459](cms), NINLET=[1],
                      MajNHYD=["B3-MJ"]
                      MinNHYD=["B3-MN"]
                      TMJSTO=[227](cu-m)
*%-----------------|-----------------------------------------------------------|
ADD HYD               NHYDsum=["MH333"], NHYDs to add=["B3-MN"+"315-333"]
*%-----------------|-----------------------------------------------------------|
SAVE HYD              NHYD=["MH333"],   # OF PCYCLES=[-1],  ICASEsh=[1]
                      HYD_COMMENT=["Total Flows at MH333"]
*%-----------------|-----------------------------------------------------------|
ROUTE PIPE            PTYPE=[1]circ, NHYDout=["333-335"], RNUMBER=[1.0], PDIAM=[1200](mm),
                      PLNGTH=[251](m), PROUGH=[0.013], PSLOPE=[0.001](m/m),
                      NHYDin=["MH333"], RDT=[1]
*%-----------------|-----------------------------------------------------------|
ROUTE PIPE            PTYPE=[1]circ, NHYDout=["335-338"], RNUMBER=[1.0], PDIAM=[1200](mm),
                      PLNGTH=[185](m), PROUGH=[0.013], PSLOPE=[0.001](m/m),
                      NHYDin=["333-335"], RDT=[1]
*%-----------------|-----------------------------------------------------------|
ROUTE PIPE            PTYPE=[1]circ, NHYDout=["338-340"], RNUMBER=[1.0], PDIAM=[1350](mm),
                      PLNGTH=[233](m), PROUGH=[0.013], PSLOPE=[0.001](m/m),
                      NHYDin=["335-338"], RDT=[1]
*%-----------------|-----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["B4"], DT=[1]min, AREA=[7.6](ha),
                      XIMP=[0.41], TIMP=[0.54], DWF=[0](cms), LOSS=[2],
                      SCS curve number CN=[75],
                      Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                              LGP=[40](m), MNP=[0.25], SCP=[0](min),
                      Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
                              LGI=[388](m), MNI=[0.013], SCI=[0](min),
                      Continuous simulation parameters:
                      IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                      SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                      InterEventTime=[18](hrs),   END=-1
*%-----------------|-----------------------------------------------------------|
COMPUTE DUALHYD       NHYDin=["B4"], CINLET=[0.655](cms), NINLET=[1],
                      MajNHYD=["B4-MJ"]
```

```
                    MinNHYD=["B4-MN"]
                    TMJSTO=[323](cu-m)
*%-----------------|------------------------------------------------------------|
ADD HYD             NHYDsum=["MH340"], NHYDs to add=["338-340"+"B4-MN"]
*%-----------------|------------------------------------------------------------|
SAVE HYD            NHYD=["MH340"],   # OF PCYCLES=[-1],  ICASEsh=[1]
                    HYD_COMMENT=["Total Flows at MH340"]
*%-----------------|------------------------------------------------------------|
ROUTE PIPE          PTYPE=[1]circ, NHYDout=["340-104"], RNUMBER=[1.0], PDIAM=[1650](mm),
                    PLNGTH=[240](m), PROUGH=[0.013], PSLOPE=[0.0015](m/m),
                    NHYDin=["MH340"], RDT=[1]
*%-----------------|------------------------------------------------------------|
ADD HYD             NHYDsum=["MH104T"], NHYDs to add=["340-104"+"MH104"]
*%-----------------|------------------------------------------------------------|
ROUTE PIPE          PTYPE=[2]rect, NHYDout=["104-105"], RNUMBER=[1.0],
PWIDTH=[2400](mm)  by PHEIGHT=[2100](mm),
                    PLNGTH=[380](m), PROUGH=[0.013], PSLOPE=[0.001](m/m),
                    NHYDin=["MH104T"], RDT=[1]
*%-----------------|---------------------------------------------------------------------
------------------------------|
CONTINUOUS STANDHYD NHYD=["B5"], DT=[1]min, AREA=[2.2](ha),
                    XIMP=[0.57], TIMP=[0.57], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[75],
                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
                            LGI=[187](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[18](hrs),   END=-1
*%-----------------|------------------------------------------------------------|
COMPUTE DUALHYD     NHYDin=["B5"], CINLET=[0.260](cms), NINLET=[1],
                    MajNHYD=["B5-MJ"]
                    MinNHYD=["B5-MN"]
                    TMJSTO=[250](cu-m)
*%-----------------|------------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["A8"], DT=[1]min, AREA=[0.96](ha),
                    XIMP=[0.71], TIMP=[0.71], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[75],
                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
                            LGI=[186](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[18](hrs),   END=-1
*%-----------------|------------------------------------------------------------|
ADD HYD             NHYDsum=["A8T"], NHYDs to add=["A6-MJ"+"A8"]
*%-----------------|------------------------------------------------------------|
COMPUTE DUALHYD     NHYDin=["A8T"], CINLET=[0.238](cms), NINLET=[1],
                    MajNHYD=["A8-MJ"]
                    MinNHYD=["A8-MN"]
                    TMJSTO=[40](cu-m)
*%-----------------|------------------------------------------------------------|
ADD HYD             NHYDsum=["MH105"], NHYDs to
add=["104-105"+"B5-MN"+"A8-MN"+"TODD_MN3j"]
*%-----------------|------------------------------------------------------------|
SAVE HYD            NHYD=["MH105"],   # OF PCYCLES=[-1],  ICASEsh=[1]
                    HYD_COMMENT=["Total Flows at MH105"]
*%-----------------|------------------------------------------------------------|
DIVERT HYD          NHYDin=["A8-MJ"] NIDout=[2]max five,
                    outflow hydrographs (NHYDs)=["A8-MJ-JR" "A8-MJ-B6"]
                    flow distribution table: (modify as necessary)
                    Note: all flows are in (cms)
```

```
                    QIDi +  QIDii  =  QTOTAL
                  [   0  +    0    =    0   ]                    ]
                  [   50 +   50    =    100  ] end
*%-----------------|-----------------------------------------------------------------
-----------------------------|
DIVERT HYD          NHYDin=["MH105"] NIDout=[2]max five,
                    outflow hydrographs (NHYDs)=["MH105-JR"  "MH105-B6"]
                    flow distribution table: (modify as necessary)
                    Note: all flows are in (cms)
                      QIDi +  QIDii  =  QTOTAL
                    [   0  +    0    =    0   ]
                    [   0  +   3.0  =   3.0  ]
                    [  96.9+  3.1    =   100  ] end
*%-----------------|-----------------------------------------------------------------
-----------------------------|
CONTINUOUS STANDHYD NHYD=["B7"], DT=[1]min, AREA=[7.19](ha),
                    XIMP=[0.41], TIMP=[0.54], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[75],
                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
                            LGI=[211](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[18](hrs),   END=-1
*%-----------------|---------------------------------------------------------------|
ADD HYD             NHYDsum=["B7-B4MJ"], NHYDs to add=["B4-MJ"+"B7"]
*%-----------------|---------------------------------------------------------------|
COMPUTE DUALHYD     NHYDin=["B7-B4MJ"], CINLET=[0.629](cms), NINLET=[1],
                    MajNHYD=["B7R-MJ"]
                    MinNHYD=["B7R-MN"]
                    TMJSTO=[311](cu-m)
*%-----------------|---------------------------------------------------------------|
ROUTE PIPE          PTYPE=[1]circ, NHYDout=["360-106A"], RNUMBER=[1.0], PDIAM=[1050](mm),
                    PLNGTH=[167](m), PROUGH=[0.013], PSLOPE=[0.001](m/m),
                    NHYDin=["B7R-MN"], RDT=[1]
*%-----------------|---------------------------------------------------------------|
*     -JFSA 2021-01-19 change B6 to be developed as per geoottawa website and apply the
parameters of A7, the nearest sub-catchment to B6, LGI is calculated based on B6 area
CONTINUOUS STANDHYD NHYD=["B6"], DT=[1]min, AREA=[3.29](ha),
                    XIMP=[0.41], TIMP=[0.54], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[75],
                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
                            LGI=[148.099](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[18](hrs),   END=-1
*%-----------------|---------------------------------------------------------------|
*     -JFSA 2021-01-25   add B1 DUALHYD as per Corrigan Report, IBI Group, 2008
COMPUTE DUALHYD     NHYDin=["B6"], CINLET=[0.064](cms), NINLET=[1],
                    MajNHYD=["B6-MJ"]
                    MinNHYD=["B6-MN"]
                    TMJSTO=[5484](cu-m)
*%-----------------|---------------------------------------------------------------|
*CONTINUOUS NASHYD   NHYD=["B6"], DT=[1]min, AREA=[3.29](ha),
*                    DWF=[0](cms),  CN/C=[75], IA=[2.5](mm),
*                    N=[3.0], TP=[0.36]hrs,
*                    Continuous simulation parameters:
*                    IaRECper=[4](hrs),
*                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                    InterEventTime=[12](hrs)
*                    Baseflow simulation parameters:
```

```
*                     BaseFlowOption=[1] ,
*                     InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
*                     VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-------------------------------------------------------------|
*%    -EX-LAND is external land. It is a part of JOCKVA sub-catchment as per Corrigan Report, IBI Group, 2008
CONTINUOUS STANDHYD NHYD=["EX-LAND"], DT=[1]min, AREA=[32.5](ha),
                    XIMP=[0.50], TIMP=[0.50], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[74],
                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
                            LGI=[465.475](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[18](hrs),   END=-1
*%-----------------|-------------------------------------------------------------|
COMPUTE DUALHYD     NHYDin=["EX-LAND"], CINLET=[2.275](cms), NINLET=[1],
                    MajNHYD=["EX-LAND-MJ"]
                    MinNHYD=["EX-LAND-MN"]
                    TMJSTO=[1365](cu-m)
*%-----------------|-------------------------------------------------------------|
ADD HYD             NHYDsum=["B6-B7ExMJ"], NHYDs to add=["B7R-MJ"+"EX-LAND-MJ"+"B5-MJ"+"B6-MJ"+"B6-MN"+"A8-MJ-B6"]
*%-----------------|-------------------------------------------------------------|
COMPUTE DUALHYD     NHYDin=["B6-B7ExMJ"], CINLET=[0.064](cms), NINLET=[1],
                    MajNHYD=["B6R-MJ"]
                    MinNHYD=["B6R-MN"]
                    TMJSTO=[5484](cu-m)
*%-----------------|-------------------------------------------------------------|
ROUTE PIPE          PTYPE=[1]circ, NHYDout=["105-106A"], RNUMBER=[1.0], PDIAM=[1800](mm),
                    PLNGTH=[208](m), PROUGH=[0.013], PSLOPE=[0.001](m/m), NHYDin=["MH105-B6"], RDT=[1]
*%-----------------|-------------------------------------------------------------|
ADD HYD             NHYDsum=["MH106A"], NHYDs to add=["360-106A"+"105-106A"+"B6R-MN"+"B6R-MJ"]
*%-----------------|-------------------------------------------------------------|
SAVE HYD            NHYD=["MH106A"],   # OF PCYCLES=[-1],  ICASEsh=[1]
                    HYD_COMMENT=["Total Flows at MH106A"]
*%-----------------|-------------------------------------------------------------|
*%    -JFSA 2021-01-12 THE MANHOLE MH106 is called MH117/106 in Corrigan Report, IBI Group, July 2008
*%
ROUTE PIPE          PTYPE=[1]circ, NHYDout=["106A-106"], RNUMBER=[1.0], PDIAM=[1800](mm),
                    PLNGTH=[190](m), PROUGH=[0.013], PSLOPE=[0.001](m/m), NHYDin=["MH106A"], RDT=[1]
*%-----------------|-------------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["A9"], DT=[1]min, AREA=[2.44](ha),
                    XIMP=[0.71], TIMP=[0.71], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[75],
                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
                            LGI=[262](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[18](hrs),   END=-1
*%-----------------|-------------------------------------------------------------|
COMPUTE DUALHYD     NHYDin=["A9"], CINLET=[0.547](cms), NINLET=[1],
                    MajNHYD=["A9-MJ"]
                    MinNHYD=["A9-MN"]
                    TMJSTO=[0](cu-m)
*%-----------------|-------------------------------------------------------------|
ADD HYD             NHYDsum=["MH106"], NHYDs to add=["106A-106"+"A9-MN"]
```

```
*%-----------------|-------------------------------------------------------------|
SAVE HYD             NHYD=["MH106"],   # OF PCYCLES=[-1],  ICASEsh=[1]
                     HYD_COMMENT=["Total Flows at MH106"]
*%-----------------|-------------------------------------------------------------|
*%    -JFSA 2021-01-12 THE MANHOLE MH107 is called MH118/107 in Corrigan Report, IBI
Group, July 2008
*%
ROUTE PIPE           PTYPE=[1]circ, NHYDout=["106-107"], RNUMBER=[1.0], PDIAM=[1800](mm),
                     PLNGTH=[122.5](m), PROUGH=[0.013], PSLOPE=[0.001](m/m),
                     NHYDin=["MH106"], RDT=[1]
*%-----------------|-------------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["A10"], DT=[1]min, AREA=[4.14](ha),
                     XIMP=[0.35], TIMP=[0.47], DWF=[0](cms), LOSS=[2],
                     SCS curve number CN=[75],
                     Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                             LGP=[40](m), MNP=[0.25], SCP=[0](min),
                     Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
                             LGI=[183](m), MNI=[0.013], SCI=[0](min),
                     Continuous simulation parameters:
                     IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                     SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                     InterEventTime=[18](hrs),   END=-1
*%-----------------|-------------------------------------------------------------|
COMPUTE DUALHYD      NHYDin=["A10"], CINLET=[0.310](cms), NINLET=[1],
                     MajNHYD=["A10-MJ"]
                     MinNHYD=["A10-MN"]
                     TMJSTO=[228](cu-m)
*%-----------------|-------------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["A11"], DT=[1]min, AREA=[10.61](ha),
                     XIMP=[0.53], TIMP=[0.62], DWF=[0](cms), LOSS=[2],
                     SCS curve number CN=[75],
                     Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                             LGP=[40](m), MNP=[0.25], SCP=[0](min),
                     Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
                             LGI=[379](m), MNI=[0.013], SCI=[0](min),
                     Continuous simulation parameters:
                     IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                     SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                     InterEventTime=[18](hrs),   END=-1
*%-----------------|-------------------------------------------------------------|
COMPUTE DUALHYD      NHYDin=["A11"], CINLET=[0.993](cms), NINLET=[1],
                     MajNHYD=["A11-MJ"]
                     MinNHYD=["A11-MN"]
                     TMJSTO=[556](cu-m)
*%-----------------|-------------------------------------------------------------|
ADD HYD              NHYDsum=["MH107"], NHYDs to add=["106-107"+"A10-MN"+"A11-MN"]
*%-----------------|-------------------------------------------------------------|
SAVE HYD             NHYD=["MH107"],   # OF PCYCLES=[-1],  ICASEsh=[1]
                     HYD_COMMENT=["Total Flows at MH107"]
*%-----------------|-------------------------------------------------------------|
ROUTE PIPE           PTYPE=[1]circ, NHYDout=["107-119"], RNUMBER=[1.0], PDIAM=[1800](mm),
                     PLNGTH=[114](m), PROUGH=[0.013], PSLOPE=[0.0012](m/m),
                     NHYDin=["MH107"], RDT=[1]
*%-----------------|-------------------------------------------------------------|
*%    -JFSA 2021-01-12 THE MANHOLE MH108 is called MH120/108 in Corrigan Report, IBI
Group, July 2008
*%
ROUTE PIPE           PTYPE=[1]circ, NHYDout=["119-108"], RNUMBER=[1.0], PDIAM=[1800](mm),
                     PLNGTH=[65.8](m), PROUGH=[0.013], PSLOPE=[0.0012](m/m),
                     NHYDin=["107-119"], RDT=[1]
*%-----------------|-------------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["A12"], DT=[1]min, AREA=[12.29](ha),
                     XIMP=[0.41], TIMP=[0.54], DWF=[0](cms), LOSS=[2],
                     SCS curve number CN=[75],
                     Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                             LGP=[40](m), MNP=[0.25], SCP=[0](min),
```

```
                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
                            LGI=[183](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[18](hrs),   END=-1
*%-------------------|-------------------------------------------------------------|
COMPUTE DUALHYD     NHYDin=["A12"], CINLET=[1.029](cms), NINLET=[1],
                    MajNHYD=["A12-MJ"]
                    MinNHYD=["A12-MN"]
                    TMJSTO=[672](cu-m)
*%-------------------|-------------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["A13"], DT=[1]min, AREA=[2.59](ha),
                    XIMP=[0.71], TIMP=[0.71], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[75],
                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
                            LGI=[379](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[18](hrs),   END=-1
*%-------------------|-------------------------------------------------------------|
COMPUTE DUALHYD     NHYDin=["A13"], CINLET=[0.571](cms), NINLET=[1],
                    MajNHYD=["A13-MJ"]
                    MinNHYD=["A13-MN"]
                    TMJSTO=[0](cu-m)
*%-------------------|-------------------------------------------------------------|
*   -JFSA 2021-01-22 add the Corrigan pond area ("Pond-Block")
CONTINUOUS STANDHYD NHYD=["Pond-Block"], DT=[1]min, AREA=[2.94](ha),
                    XIMP=[0.415], TIMP=[0.415], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[75],
                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
                            LGI=[183](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[18](hrs),   END=-1
*%-------------------|-------------------------------------------------------------|
ADD HYD             NHYDsum=["MH108"], NHYDs to add=["119-108"+"A13-MN"+"A12-MN"]
*%-------------------|-------------------------------------------------------------|
SAVE HYD            NHYD=["MH108"],   # OF PCYCLES=[-1],  ICASEsh=[1]
                    HYD_COMMENT=["Total Flows at MH108"]
*%-------------------|-------------------------------------------------------------|
ROUTE PIPE          PTYPE=[1]circ, NHYDout=["108-116"], RNUMBER=[1.0], PDIAM=[1800](mm),
                    PLNGTH=[76.6](m), PROUGH=[0.013], PSLOPE=[0.0013](m/m),
                    NHYDin=["MH108"], RDT=[1]
*%-------------------|-------------------------------------------------------------|
ROUTE PIPE          PTYPE=[1]circ, NHYDout=["116-corrig"], RNUMBER=[1.0],
PDIAM=[1800](mm),
                    PLNGTH=[79.5](m), PROUGH=[0.013], PSLOPE=[0.0013](m/m),
                    NHYDin=["108-116"], RDT=[1]
*%-------------------|-------------------------------------------------------------|
ADD HYD             NHYDsum=["Corrigan"], NHYDs to add=["116-corrig"+"Pond-Block"]
*%-------------------|-------------------------------------------------------------|
SAVE HYD            NHYD=["Corrigan"],   # OF PCYCLES=[-1],  ICASEsh=[1]
                    HYD_COMMENT=["Total Flows at Corrigan Pond]
*%-------------------|-------------------------------------------------------------|
ROUTE RESERVOIR     NHYDout=["Co-P"],  NHYDin=["Corrigan"],
                    RDT=[1](min),
                          TABLE of ( OUTFLOW-STORAGE ) values
                                      (cms) - (ha-m)
                                    [   0.0 ,  0.0 ]
```

```
                                    [   0.015 , 0.04118]
                                    [   0.030 , 0.08297]
                                    [   0.045 , 0.12537]
                                    [   0.060 , 0.16837]
                                    [   0.075 , 0.21199]
                                    [   0.090 , 0.27545]
                                    [   0.105 , 0.34650]
                                    [   0.120 , 0.42049]
                                    [   0.135 , 0.50188]
                                    [   0.186 , 0.60307]
                                    [   2.110 , 0.79083]
                                    [   5.874 , 1.00271]
                                    [   11.395 , 1.29643]
                                    [   18.770 , 1.62054]
                                    [   28.143 , 1.97516]
                                    [   -1  ,   -1  ]  (max twenty pts)
                          NHYDovf=["Co-P-OVF"]
*%-----------------|-------------------------------------------------------------|
ADD HYD             NHYDsum=["corrig"], NHYDs to add=["Co-P-OVF"+"Co-P"+"N_TO"+"MH105-JR"+"A8-MJ-JR"+"A9-MJ"+"A10-MJ"+"A11-MJ"+"A12-MJ"+"A13-MJ"]
*%-----------------|-------------------------------------------------------------|
SAVE HYD            NHYD=["corrig"],   # OF PCYCLES=[-1],  ICASEsh=[1]
                    HYD_COMMENT=["Total Flows at Corrigan Pond"]
*%-----------------|-------------------------------------------------------------|
*#*******************************************************************************
*#    Corrigan Pond 1
*#    - Rating curve obtained from Barrhaven South MSS modeling
*#    - Tributary Drainage Area to MSS Pond 1 = 145 ha
*#*******************************************************************************
*ROUTE RESERVOIR     NHYDout=["MS_P1"],  NHYDin=["CORRIG"],
*                    RDT=[1](min),
*                          TABLE of ( OUTFLOW-STORAGE ) values
*                                      (cms) - (ha-m)
*                                  [   0.0 ,  0.0 ]
*                                  [   0.06 , 0.58]
*                                  [   -1  ,  -1  ]  (max twenty pts)
*                          NHYDovf=["P1-OVF"]
*%-----------------|-------------------------------------------------------------|
*ADD HYD             NHYDsum=["SN_CO"], NHYDs to add=["N_TO"+"P1-OVF"+"MS_P1"]
*%-----------------|-------------------------------------------------------------|
*SAVE HYD            NHYD=["SN_CO"],   # OF PCYCLES=[-1],  ICASEsh=[1]
*                    HYD_COMMENT=["Total Flows at Corrigan Drain"]
*%-----------------|-------------------------------------------------------------|
*#
*# Hydrograph from Corrigan Drain routed to Jockvale Road
*# Channel X-Section obtained from RVCA Hydraulic Model - Station 2462
*#
ROUTE CHANNEL       NHYDout=["N_MI"] ,NHYDin=["corrig"] ,
                    RDT=[1](min),
                    CHLGTH=[580](m),  CHSLOPE=[0.4448](%),
                                        FPSLOPE=[0.4448](%),
                    SECNUM=[1.0],       NSEG=[3]
                    ( SEGROUGH, SEGDIST (m))=
                      [0.075,-17.72
                      -0.045,17.72
                      0.075,80.62] NSEG times
                    ( DISTANCE (m), ELEVATION (m))=
                    [-83.32, 90.00]
                    [-81.36, 89.50]
                    [-79.12, 89.00]
                    [-76.13, 88.50]
                    [-20.46, 88.00]
                    [-19.36, 87.50]
                    [-18.51, 87.00]
                    [-17.72, 86.50]
```

```
                    [-11.95, 85.24]
                    [-0.11, 85.12]
                    [11.49, 85.20]
                    [17.72, 86.50]
                    [19.74, 87.00]
                    [21.22, 87.50]
                    [22.68, 88.00]
                    [24.28, 88.50]
                    [26.79, 89.00]
                    [71.98, 90.00]
                    [80.62, 90.50]
*%-----------------|-----------------------------------------------------------|
*#******************************************************************************
*#    Catchment MILLS
*#    - To SWM Facility north of the Jock
*#    - Primarily residental development
*#******************************************************************************
CONTINUOUS STANDHYD NHYD=["MILLS"], DT=[1]min, AREA=[175.99](ha),
                    XIMP=[0.38], TIMP=[0.38], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[74],
                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
                            LGI=[1118.123](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[18](hrs),   END=-1
*%-----------------|-----------------------------------------------------------|
*#******************************************************************************
*#    Chapman Mills SWM Pond
*#    - Rating curve obtained from CCL hydraulic modeling
*#******************************************************************************
ROUTE RESERVOIR     NHYDout=["MILL_P"],  NHYDin=["MILLS"],
                    RDT=[1](min),
                          TABLE of ( OUTFLOW-STORAGE ) values
                                      (cms) - (ha-m)
                                    [   0.0 ,  0.0 ]
                                    [   0.01 , 0.01]
                                    [   0.05 , 0.06]
                                    [   0.09 , 0.11]
                                    [   0.13 , 0.15]
                                    [   0.18 , 0.19]
                                    [   0.28 , 0.28]
                                    [   0.37 , 0.34]
                                    [   0.45 , 0.40]
                                    [   0.51 , 0.44]
                                    [   0.56 , 0.47]
                                    [   0.64 , 0.52]
                                    [   0.76 , 0.59]
                                    [   0.86 , 0.65]
                                    [   1.09 , 0.78]
                                    [   1.44 , 0.96]
                                    [   3.18 , 1.84]
                                    [   4.05 , 2.31]
                                    [   -1  ,  -1  ]  (max twenty pts)
                          NHYDovf=["MIL-OV"]
*%-----------------|-----------------------------------------------------------|
ADD HYD             NHYDsum=["SN_MI"], NHYDs to add=["N_MI"+"MIL-OV"+"MILL_P"]
*%-----------------|-----------------------------------------------------------|
SAVE HYD            NHYD=["SN_MI"],   # OF PCYCLES=[-1],  ICASEsh=[1]
                    HYD_COMMENT=["Total Flows at Jockvale Road"]
*%-----------------|-----------------------------------------------------------|
*#
*# Hydrograph from Jockvale Road routed to Heart's Desire
*# Channel X-Section obtained from RVCA Hydraulic Model - Station 689
```

```
*#
ROUTE CHANNEL       NHYDout=["N_DE"] ,NHYDin=["SN_MI"] ,
                    RDT=[1](min),
                    CHLGTH=[1962](m),  CHSLOPE=[0.2227](%),
                                        FPSLOPE=[0.2227](%),
                    SECNUM=[1.0],       NSEG=[3]
                    ( SEGROUGH, SEGDIST (m))=
                      [0.075,-17.56
                      -0.045,18.27
                      0.075,32.51] NSEG times
                    ( DISTANCE (m), ELEVATION (m))=
                    [-54.07, 85.00]
                    [-39.43, 84.50]
                    [-28.30, 84.00]
                    [-24.12, 83.50]
                    [-22.30, 83.00]
                    [-20.55, 82.50]
                    [-17.56, 82.00]
                    [-12.63, 81.22]
                    [-0.11, 80.75]
                    [11.55, 81.22]
                    [18.27, 82.00]
                    [19.82, 82.50]
                    [22.48, 83.00]
                    [27.90, 83.50]
                    [29.31, 84.00]
                    [30.81, 84.50]
                    [32.51, 85.00]
*%-------------------|------------------------------------------------------------|
*#*******************************************************************************
*#    Catchment DESIRE
*#    - To Jock River (north of the Jock)
*#    - Rural-estate subdivision (Heart's Desire Community)
*#*******************************************************************************
CONTINUOUS STANDHYD NHYD=["DESIRE"], DT=[1]min, AREA=[23.78](ha),
                    XIMP=[0.25], TIMP=[0.25], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[77],
                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
                            LGI=[400](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[18](hrs),   END=-1
*%-------------------|------------------------------------------------------------|
*#*******************************************************************************
*#    Catchment JOCKVA
*#    - To Jockvale SWM Facility
*#    - Residential development & golf course
*#    - JFSA 2021-01-11 update JOCKVA after updating CORRIG as per IBI GROUP, July 2008.
*#      JOCKVA area became 225.13 ha instead of 257.63 ha. JOCKVA separated into two areas JOCKVA and EX-LAND 32.5 ha as per IBI GROUP, July 2008.
*#*******************************************************************************
CONTINUOUS STANDHYD NHYD=["JOCKVA"], DT=[1]min, AREA=[225.13](ha),
                    XIMP=[0.50], TIMP=[0.50], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[74],
                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
                            LGI=[1310.55](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[18](hrs),   END=-1
*%-------------------|------------------------------------------------------------|
```

```
ADD HYD              NHYDsum=["JOCKVA-TO"], NHYDs to
add=["EX-LAND-MN"+"JOCKVA"+"B2-MJ"+"B3-MJ"]
*%-----------------|------------------------------------------------------------|
SAVE HYD             NHYD=["JOCKVA-TO"],   # OF PCYCLES=[-1],  ICASEsh=[1]
                     HYD_COMMENT=["Total Flows at KB first pond"]
*%-----------------|------------------------------------------------------------|
*#*****************************************************************************
*#    Jockvale SWM Facility
*#    - Rating curve obtained from Jockvale Servicing Study (CCL 1999)
*#*****************************************************************************
ROUTE RESERVOIR      NHYDout=["JOCK_P"],  NHYDin=["JOCKVA-TO"],
                     RDT=[1](min),
                           TABLE of ( OUTFLOW-STORAGE ) values
                                       (cms) - (ha-m)
                                     [   0.0 ,  0.0 ]
                                     [   0.27 , 0.03]
                                     [   0.28 , 0.55]
                                     [   0.29 , 1.14]
                                     [   0.30 , 1.80]
                                     [   0.31 , 2.32]
                                     [   1.12 , 2.87]
                                     [   2.92 , 3.45]
                                     [   4.64 , 4.07]
                                     [   6.69 , 4.72]
                                     [   9.02 , 5.39]
                                     [   11.62 , 6.10]
                                     [   14.42 , 6.85]
                                     [   17.45 , 7.62]
                                     [   20.69 , 8.44]
                                     [   24.08 , 9.28]
                                     [   27.68 , 10.17]
                                     [   -1  ,   -1  ]  (max twenty pts)
                           NHYDovf=["JO-OVF"]
*%-----------------|------------------------------------------------------------|
ADD HYD              NHYDsum=["SN_DE"], NHYDs to add=["N_DE"+"DESIRE"+"JO-OVF"+"JOCK_P"]
*%-----------------|------------------------------------------------------------|
SAVE HYD             NHYD=["SN_DE"],   # OF PCYCLES=[-1],  ICASEsh=[1]
                     HYD_COMMENT=["Total Flows at Heart's Desire"]
*%-----------------|------------------------------------------------------------|
*#
*# Hydrograph from Heart's Desire routed to Rideau River
*# Channel X-Section obtained from RVCA Hydraulic Model - Station 0
*#
ROUTE CHANNEL        NHYDout=["N1"] ,NHYDin=["SN_DE"] ,
                     RDT=[1](min),
                     CHLGTH=[563](m),  CHSLOPE=[0.9668](%),
                                         FPSLOPE=[0.9668](%),
                     SECNUM=[1.0],       NSEG=[3]
                     ( SEGROUGH, SEGDIST (m))=
                       [0.075,-30.20
                       -0.045,30.20
                       0.075,48.48] NSEG times
                     ( DISTANCE (m), ELEVATION (m))=
                     [-98.46, 81.50]
                     [-92.24, 81.00]
                     [-86.88, 80.50]
                     [-81.54, 80.00]
                     [-74.36, 79.50]
                     [-63.54, 79.00]
                     [-39.23, 78.50]
                     [-34.51, 78.00]
                     [-33.01, 77.50]
                     [-30.20, 77.00]
                     [-13.42, 76.18]
                     [-1.14, 76.09]
                     [17.06, 76.18]
```

```
                    [30.20, 77.00]
                    [32.95, 77.50]
                    [34.06, 78.00]
                    [35.11, 78.50]
                    [36.32, 79.00]
                    [37.74, 79.50]
                    [48.48, 81.50]
*%-----------------|------------------------------------------------------------|
*#******************************************************************************
*#    Catchment S-2
*#    - To Jock River (north and south)
*#    - Undeveloped floodplain and river
*#******************************************************************************
CONTINUOUS NASHYD   NHYD=["S-2"], DT=[1]min, AREA=[102.94](ha),
                    DWF=[0](cms), CN/C=[72],  IA=[4.67](mm),
                    N=[3], TP=[0.40]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|------------------------------------------------------------|
ADD HYD             NHYDsum=["SN_N1"], NHYDs to add=["N1"+"S-2"]
*%-----------------|------------------------------------------------------------|
SAVE HYD            NHYD=["SN_N1"],   # OF PCYCLES=[-1],  ICASEsh=[1]
                    HYD_COMMENT=["Total Flows at Rideau River"]
*%-----------------|------------------------------------------------------------|
*###############################################################################
*%  5 yr, 24 hr SCS storm based on OTTAWA CDA IDF Curves
START               TZERO=[0.0],  METOUT=[2],  NSTORM=[1],  NRUN=[5]
*%                   ["C24SC005.stm"] <--storm filename, one per line for NSTORM time
*%-----------------|------------------------------------------------------------|
*%  10 yr, 24 hr SCS storm based on OTTAWA CDA IDF Curves
START               TZERO=[0.0],  METOUT=[2],  NSTORM=[1],  NRUN=[10]
*%                   ["C24SC010.stm"] <--storm filename, one per line for NSTORM time
*%-----------------|------------------------------------------------------------|
*%  25 yr, 24 hr SCS storm based on OTTAWA CDA IDF Curves
START               TZERO=[0.0],  METOUT=[2],  NSTORM=[1],  NRUN=[25]
*%                   ["C24SC025.stm"] <--storm filename, one per line for NSTORM time
*%-----------------|------------------------------------------------------------|
*%  50 yr, 24 hr SCS storm based on OTTAWA CDA IDF Curves
START               TZERO=[0.0],  METOUT=[2],  NSTORM=[1],  NRUN=[50]
*%                   ["C24SC050.stm"] <--storm filename, one per line for NSTORM time
*%-----------------|------------------------------------------------------------|
*%  100 yr, 3 hr Chicago storm based on OTTAWA CDA IDF Curves
*START               TZERO=[0.0],  METOUT=[2],  NSTORM=[1],  NRUN=[100]
*%                   ["100YC3H.STM"] <--storm filename, one per line for NSTORM time
*%-----------------|------------------------------------------------------------|
*%  100 yr, 24 hr SCS storm based on OTTAWA CDA IDF Curves
START               TZERO=[0.0],  METOUT=[2],  NSTORM=[1],  NRUN=[100]
*%                   ["C24SC100.stm"] <--storm filename, one per line for NSTORM time
*%-----------------|------------------------------------------------------------|
*%  100 yr, 3 hr Chicago storm based on OTTAWA CDA IDF Curves
*START               TZERO=[0.0],  METOUT=[2],  NSTORM=[1],  NRUN=[100]
*%                   ["C24SC100.stm"] <--storm filename, one per line for NSTORM time
*START               TZERO=[0.0],  METOUT=[2],  NSTORM=[1],  NRUN=[101]
*%                   ["A24SC100.stm"] <--storm filename, one per line for NSTORM time
*START               TZERO=[0.0],  METOUT=[2],  NSTORM=[1],  NRUN=[102]
*%                   ["A24SC100_60.stm"] <--storm filename, one per line for NSTORM time
FINISH
```

```
===========================================================================================
SSSSS   W   W   M   M   H   H   Y   Y   M   M    OOO         222     000    11   5555   =========
S       W W W   MM MM   H   H    Y Y    MM MM   O   O          2    0   0   11   5
SSSSS   W W W   M M M   HHHHH     Y     M M M   O   O          2    0   0   11   5      Ver 5.500
    S    W W    M   M   H   H     Y     M   M   O   O        222    0   0   11   555    FEB  2015
SSSSS    W W    M   M   H   H     Y     M   M    OOO         2      0   0   11     5    =========
                                                             2      0   0   11     5    # 2549237
      StormWater Management HYdrologic Model                  222     000    11   555    =========
*******************************************************************************************
**************************************  SWMHYMO Ver 5.500  ********************************
******************  A single event and continuous hydrologic simulation model  ******************
******************     based on the principles of HYMO and its successors      ******************
******************                OTTHYMO-83 and OTTHYMO-89.                   ******************
*******************************************************************************************
****************** Distributed by:  J.F. Sabourin and Associates Inc.          ******************
******************                  Ottawa,  Ontario: (613) 836-3884           ******************
******************                  Gatineau, Quebec: (819) 243-6858           ******************
******************                  E-Mail: swmhymo@jfsa.Com                   ******************
*******************************************************************************************
+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
++++++++++++++++++ Licensed user: JFSAinc.                                     +++++++++++++++++++
++++++++++++++++++               Ottawa             SERIAL#:2549237            +++++++++++++++++++
+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
*******************************************************************************************
******************            ++++++ PROGRAM ARRAY DIMENSIONS ++++++           ******************
******************            Maximum value for ID numbers  :     11           ******************
******************            Max. number of rainfall points: 105408           ******************
******************            Max. number of flow points    : 105408           ******************
*******************************************************************************************
********************************   S U M M A R Y   O U T P U T   ********************************
*******************************************************************************************
*                 RUN DATE: 2021-03-04     TIME: 11:54:16     RUN COUNTER: 002083         *
*******************************************************************************************
* Input   file: T:\PROJ\1474-16\Design\20201026-QuantityControlAnalysis\SWMHYMO\SMR-Model\updated*
*               3\SMR_S-1_S-Fr_SD.dat                                                     *
* Output  file: T:\PROJ\1474-16\Design\20201026-QuantityControlAnalysis\SWMHYMO\SMR-Model\updated*
*               3\SMR_S-1_S-Fr_SD.out                                                     *
* Summary file: T:\PROJ\1474-16\Design\20201026-QuantityControlAnalysis\SWMHYMO\SMR-Model\updated*
*               3\SMR_S-1_S-Fr_SD.sum                                                     *
* User comments:                                                                          *
* 1:______________________________________________________________________________________*
* 2:______________________________________________________________________________________*
* 3:______________________________________________________________________________________*
*******************************************************************************************
#***************************************************************************
#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
#***************************************************************************
#  Project Name: [Jock River]    Project Number: [1474-16]
#  Date        : 04-03-2021
#  Modeller    : [M.M.]
#  Company     : JFSAinc.
#  License #   :  2549237
#***************************************************************************
# CALIBRATION OF SUMMER MODEL PARAMETERS
# USING CONTINUOUS SIMULATIONS
# Rainfall data from JFSA raingauge installed at site + other gauges by the City
# Use data collected from May 1st to July 14, 2003
# 2020-11-30 change TMJSTO in COMPUTE DUALHYD (TMJSTO = 0.1 instead of 0.0001)
# 2020-12-01 correct pond curve values
# 2020-12-01 change W_CLAR_BRAZ XIMP to 0.55, SLPI=[0.5](%) (impervious slope), and LGI up to 700m
# 2021-02-19 Change the slope for ROUTE CHANNEL Station 2462 (NHYDout=["N_TO"] ,NHYDin=["SN_TO"]) from 0.033 % (as per S
# 2021-02-19 Change the slope for ROUTE CHANNEL Station 5002 (NHYDout=["N_WC"] ,NHYDin=["SN_CE"]) from 0.01 % (as per St
# ---------------------------------------------------------------------------
  ** END OF RUN :    1
*******************************************************************************************
 RUN#:COMMAND#
R0002:C00001-------------------------------------------------------------------------------
     START
      [TZERO =    .00 hrs on        0]
      [METOUT=   2    (1=imperial, 2=metric output)]
      [NSTORM=   1 ]
      [NRUN  = 0002 ]
#***************************************************************************
#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
#***************************************************************************
#  Project Name: [Jock River]    Project Number: [1474-16]
#  Date        : 04-03-2021
#  Modeller    : [M.M.]
#  Company     : JFSAinc.
#  License #   :  2549237
#***************************************************************************
# CALIBRATION OF SUMMER MODEL PARAMETERS
# USING CONTINUOUS SIMULATIONS
# Rainfall data from JFSA raingauge installed at site + other gauges by the City
# Use data collected from May 1st to July 14, 2003
# 2020-11-30 change TMJSTO in COMPUTE DUALHYD (TMJSTO = 0.1 instead of 0.0001)
# 2020-12-01 correct pond curve values
# 2020-12-01 change W_CLAR_BRAZ XIMP to 0.55, SLPI=[0.5](%) (impervious slope), and LGI up to 700m
# 2021-02-19 Change the slope for ROUTE CHANNEL Station 2462 (NHYDout=["N_TO"] ,NHYDin=["SN_TO"]) from 0.033 % (as per S
# 2021-02-19 Change the slope for ROUTE CHANNEL Station 5002 (NHYDout=["N_WC"] ,NHYDin=["SN_CE"]) from 0.01 % (as per St
# ---------------------------------------------------------------------------
R0002:C00002-------------------------------------------------------------------------------
     READ STORM
      Filename = storm.001
      Comment  = Pluie SCS de 24 hres 1:2 ans pour Ottawa CDA
      [SDT=10.00:SDUR=  24.00:PTOT=  45.51]
R0002:C00003-------------------------------------------------------------------------------
     MODIFY STORM
      [RFACT=  1.00:TSHIFT= 960.00 min]
      [SDT=10.00:SDUR=  40.00:PTOT=  45.51]
R0002:C00004-------------------------------------------------------------------------------
     DEFAULT VALUES
      Filename = T:\PROJ\1474-16\Design\20201026-QuantityControlAnalysis\SWMHYMO\SMR-Model\updated3\CitiGate.DEF
      ICASEdv  = 1 (read and print data)
      FileTitle= File comment: [Based onvarious calibration exercises in Onta
                 THE FOLLOWING PARAMETERS ARE USED IN THE DESIGN STANDHYD COM
      Horton's infiltration equation parameters:
      [Fo= 76.20 mm/hr] [Fc=13.20 mm/hr] [DCAY= 4.14 /hr] [F=  .00 mm]
      Parameters for PERVIOUS surfaces in STANDHYD:
      [IAper=   4.67 mm] [LGP=50.00 m] [MNP= .250]
      Parameters for IMPERVIOUS surfaces in STANDHYD:
      [IAimp=   1.57 mm] [CLI= 1.50]   [MNI= .013]
      Parameters used in NASHYD:
      [Ia=   4.67 mm] [N= 3.00]
      Average monthly Pan Evaporation data in    (mm)
   JAN   FEB   MAR   APR   MAY   JUN   JUL   AUG   SEP   OCT   NOV   DEC
   .00   .00   .00   .00   .00   .00   .00   .00   .00   .00   .00   .00
      Average monthly Potential Evapotranspiration in    (mm)
   JAN   FEB   MAR   APR   MAY   JUN   JUL   AUG   SEP   OCT   NOV   DEC
   .00   .00   .00   .00   .00   .00   .00   .00   .00   .00   .00   .00
R0002:C00005-------------------------------------------------------------------------------
     COMPUTE API
      [APIini= 50.00: APIkdy= .8500: APIkdt= .9989]
      {APImax= 80.12: APIavg= 56.74: APImin= 44.87}
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.32
R0002:C00006-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:JR_HW       3680.00    6.204 No_date   37:06   11.47 .252     .000
      [CN= 64.0: N= 3.00: Tp= 7.13]
      [IaREC= 4.00: SMIN= 57.05: SMAX=380.32: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.32
R0002:C00007-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_13        971.00    2.187 No_date   32:37   10.75 .236     .000
      [CN= 61.0: N= 3.00: Tp= 3.76]
      [IaREC= 4.00: SMIN= 64.50: SMAX=430.01: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.80
R0002:C00008-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:JR_GWM      3074.00    3.218 No_date   39:59    9.43 .207     .000
      [CN= 55.0: N= 3.00: Tp=11.33]
      [IaREC= 4.00: SMIN= 83.24: SMAX=554.96: SK= .010]
      [InterEventTime=  12.00]
R0002:C00009-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:JR_ASH      1781.00    5.504 No_date   32:45   13.94 .306     .000
      [CN= 72.0: N= 3.00: Tp= 3.91]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
R0002:C00010-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_11        500.00    2.720 No_date   29:22   11.98 .263     .000
      [CN= 66.0: N= 3.00: Tp= 1.24]
      [IaREC= 4.00: SMIN= 52.62: SMAX=350.79: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.80
R0002:C00011-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:NN_CK       1917.00    4.042 No_date   34:34   11.98 .263     .000
      [CN= 66.0: N= 3.00: Tp= 5.29]
      [IaREC= 4.00: SMIN= 52.62: SMAX=350.79: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.52
R0002:C00012-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_10       5666.00   11.228 No_date   38:07   13.94 .306     .000
      [CN= 72.0: N= 3.00: Tp= 8.00]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.75
R0002:C00013-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:KG_CK       8376.00   11.072 No_date   39:59   11.98 .263     .000
      [CN= 66.0: N= 3.00: Tp=11.66]
      [IaREC= 4.00: SMIN= 52.62: SMAX=350.79: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.68
R0002:C00014-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_9        1132.00    4.434 No_date   30:56   13.35 .293     .000
      [CN= 70.0: N= 3.00: Tp= 2.51]
      [IaREC= 4.00: SMIN= 43.07: SMAX=287.10: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.82
R0002:C00015-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:NC_CK       4464.00    5.504 No_date   39:59   10.98 .241     .000
      [CN= 62.0: N= 3.00: Tp=11.32]
      [IaREC= 4.00: SMIN= 61.90: SMAX=412.66: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.80
R0002:C00016-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_8         131.00     .805 No_date   28:57   11.22 .247     .000
      [CN= 63.0: N= 3.00: Tp=  .90]
      [IaREC= 4.00: SMIN= 59.42: SMAX=396.11: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.65
R0002:C00017-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:HB_DR       3854.00    6.242 No_date   38:46   11.98 .263     .000
      [CN= 66.0: N= 3.00: Tp= 8.42]
      [IaREC= 4.00: SMIN= 52.62: SMAX=350.79: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.82
R0002:C00018-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_7        3197.00    4.651 No_date   36:31    9.85 .217     .000
      [CN= 57.0: N= 3.00: Tp= 6.65]
      [IaREC= 4.00: SMIN= 76.32: SMAX=508.81: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.75
R0002:C00019-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_6         165.00     .413 No_date   33:07   12.24 .269     .000
      [CN= 67.0: N= 3.00: Tp= 4.18]
      [IaREC= 4.00: SMIN= 50.55: SMAX=336.97: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.67
R0002:C00020-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:VG_DR       1332.00    3.148 No_date   35:23   13.94 .306     .000
      [CN= 72.0: N= 3.00: Tp= 5.95]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
R0002:C00021-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_5         224.00    2.597 No_date   28:45   15.91 .350     .000
      [CN= 77.0: N= 3.00: Tp=  .75]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.20
R0002:C00022-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:FL_CK       4945.00   14.839 No_date   33:25   14.57 .320     .000
      [CN= 74.0: N= 3.00: Tp= 4.45]
      [IaREC= 4.00: SMIN= 36.67: SMAX=244.49: SK= .010]
      [InterEventTime=  12.00]
R0002:C00023-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_5A2        20.00     .309 No_date   28:36   17.79 .391     .000
      [CN= 81.0: N= 3.00: Tp=  .62]
      [IaREC= 4.00: SMIN= 25.21: SMAX=168.09: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.61
R0002:C00024-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_5A1      1412.00    3.090 No_date   38:04   15.22 .334     .000
      [CN= 75.0: N= 3.00: Tp= 8.00]
      [IaREC= 4.00: SMIN= 33.81: SMAX=225.43: SK= .010]
      [InterEventTime=  12.00]
R0002:C00025-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_4         585.00    4.325 No_date   29:58   17.79 .391     .000
      [CN= 81.0: N= 3.00: Tp= 1.75]
      [IaREC= 4.00: SMIN= 25.21: SMAX=168.09: SK= .010]
      [InterEventTime=  12.00]
R0002:C00026-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:LM_CK       1021.00    5.747 No_date   30:50   17.39 .382     .000
      [CN= 80.0: N= 3.00: Tp= 2.46]
      [IaREC= 4.00: SMIN= 26.32: SMAX=175.50: SK= .010]
      [InterEventTime=  12.00]
R0002:C00027-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_2         177.00    2.052 No_date   28:45   15.91 .350     .000
      [CN= 77.0: N= 3.00: Tp=  .75]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0002:C00028-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SM_DR       1122.00    5.337 No_date   31:50   17.79 .391     .000
      [CN= 81.0: N= 3.00: Tp= 3.25]
      [IaREC= 4.00: SMIN= 25.21: SMAX=168.09: SK= .010]
      [InterEventTime=  12.00]
R0002:C00029-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:MO_DR       2737.00   11.528 No_date   31:35   15.56 .342     .000
      [CN= 76.0: N= 3.00: Tp= 3.03]
      [IaREC= 4.00: SMIN= 32.46: SMAX=216.39: SK= .010]
      [InterEventTime=  12.00]
#
# Routing hydrographs
#
# Starting with the addition of Jock River Headwater and Subwatershed 13
#
R0002:C00030-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:JR_HW       3680.00    6.204 No_date   37:06   11.47  n/a     .000
                     +    1.0 02:SW_13        971.00    2.187 No_date   32:37   10.75  n/a     .000
                  SUM=    1.0 01:S_N13       4651.00    7.871 No_date   35:37   11.32  n/a     .000
#
# Sum of hydrographs from Node 13 routed to Node 13A
# (Approximated cross-section - see cross-section 258)
# Use n=0.04 for summer conditions and n=0.025 for spring conditions
#
R0002:C00031-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N13       4651.00    7.871 No_date   35:37   11.32  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N13A        4651.00    6.258 No_date   39:59   11.32  n/a     .000
      [L/S/n= 9074./ .022/.040]
      {Vmax=  .429:Dmax= 2.557}
#
# Addition of Subwatershed Jock River at Goodwood Marsh to Node 13A
#
R0002:C00032-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N13A        4651.00    6.258 No_date   39:59   11.32  n/a     .000
                     +    1.0 02:JR_GWM      3074.00    3.218 No_date   39:59    9.43  n/a     .000
                  SUM=    1.0 01:SN13A       7725.00    9.475 No_date   39:59   10.57  n/a     .000
#
# Insertion of a reservoir to simulate the effects of the Goodwood Marsh
#
R0002:C00033-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:SN13A       7725.00    9.475 No_date   39:59   10.57  n/a     .000
                 out <=   1.0 01:RES_GM      7725.00    2.619 No_date   55:07   10.57  n/a     .000
     {MxStoUsed=.3585E+02  m3}
#
R0002:C00034-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:RES_GM      7725.00    2.619 No_date   55:07   10.57  n/a     .000
      fname :H_RESGM
      remark:Outflow from Res GM
# Output of Reservoir Goodwood Marsh routed from Node 13A to Node 12
# (Approximated cross-section - see cross-section 258)
# Use n=0.04 for summer conditions and n=0.025 for spring conditions
R0002:C00035-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:RES_GM      7725.00    2.619 No_date   55:07   10.57  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N12         7725.00    2.609 No_date   58:09   10.57  n/a     .000
      [L/S/n= 5926./ .076/.040]
      {Vmax=  .501:Dmax= 1.329}
#
# Addition of Subwatershed Jock River at Ashton to Node 12
#
R0002:C00036-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N12         7725.00    2.609 No_date   58:08   10.57  n/a     .000
                     +    1.0 02:JR_ASH      1781.00    5.504 No_date   32:45   13.94  n/a     .000
                  SUM=    1.0 01:S_N12       9506.00    7.458 No_date   32:50   11.20  n/a     .000
R0002:C00037-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:S_N12       9506.00    7.458 No_date   32:50   11.20  n/a     .000
      fname :H_SN12
      remark:flow at S_N12 near Ashton
#
# Sum of hydrographs from Node 12 routed to Node 11
# (Approximated cross-section - see cross-section 258)
# Use n=0.04 for summer conditions and n=0.025 for spring conditions
#
# Sum of hydrographs from Node 12 routed to Node 11 with Dummy section 248
#
R0002:C00038-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N12       9506.00    7.458 No_date   32:50   11.20  n/a     .000
     [RDT= 1.00] out<-    1.0 01:Dum11       9506.00    7.379 No_date   33:12   11.20  n/a     .000
      [L/S/n=  972./ .054/.040]
      {Vmax=  .591:Dmax= 2.108}
#
# Addition of Subwatershed 11 and No Name Creek to Node 11
```

```
#
R0002:C00039------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:Dum11       9506.00    7.379 No_date   33:12   11.20  n/a     .000
                     +     1.0 02:SW_11        500.00    2.720 No_date   29:22   11.98  n/a     .000
                     +     1.0 02:NN_CK       1917.00    4.042 No_date   34:34   11.98  n/a     .000
                  SUM=     1.0 01:S_N11      11923.00   12.077 No_date   33:14   11.36  n/a     .000
#
# Sum of hydrographs from Node 11 routed to Node 10
# Section 1
#
R0002:C00040------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->     1.0 02:S_N11      11923.00   12.077 No_date   33:14   11.36  n/a     .000
     [RDT= 1.00] out<-     1.0 01:N10        11923.00    8.276 No_date   39:46   11.36  n/a     .000
      [L/S/n=14028./ .157/.040]
      {Vmax=  .462:Dmax=  .886}
#
# Addition of Subwatershed 10 to Node 10
#
R0002:C00041------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:N10        11923.00    8.276 No_date   39:46   11.36  n/a     .000
                     +     1.0 02:SW_10       5666.00   11.228 No_date   38:07   13.94  n/a     .000
                  SUM=     1.0 01:S_N10      17589.00   19.451 No_date   38:31   12.19  n/a     .000
R0002:C00042------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD               1.0 01:S_N10      17589.00   19.451 No_date   38:31   12.19  n/a     .000
      fname :H_SN10
      remark:flow at S_N10: N10 + SW_10
# Addition of Kings Creek to S_N10
#
R0002:C00043------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:S_N10      17589.00   19.451 No_date   38:31   12.19  n/a     .000
                     +     1.0 02:KG_CK       8376.00   11.072 No_date   39:59   11.98  n/a     .000
                  SUM=     1.0 01:S_N10A     25965.00   30.328 No_date   39:58   12.12  n/a     .000
#
# Sum of hydrographs from Node 10 routed to Node 9
# Section 2
#
R0002:C00044------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->     1.0 02:S_N10A     25965.00   30.328 No_date   39:58   12.12  n/a     .000
     [RDT= 1.00] out<-     1.0 01:N9         25965.00   29.579 No_date   39:59   12.12  n/a     .000
      [L/S/n= 3982./ .075/.040]
      {Vmax=  .595:Dmax= 1.208}
#
# Addition of Subwatershed 9 and Nichols Creek to Node 9
#
R0002:C00045------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:N9         25965.00   29.579 No_date   39:59   12.12  n/a     .000
                     +     1.0 02:SW_9        1132.00    4.434 No_date   30:56   13.35  n/a     .000
                     +     1.0 02:NC_CK       4464.00    5.504 No_date   39:59   10.98  n/a     .000
                  SUM=     1.0 01:S_N9       31561.00   36.313 No_date   39:59   12.00  n/a     .000
#
# Sum of hydrographs from Node 9 routed to Node 8
# Section 3
#
R0002:C00046------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->     1.0 02:S_N9       31561.00   36.313 No_date   39:59   12.00  n/a     .000
     [RDT= 1.00] out<-     1.0 01:N8         31561.00   34.173 No_date   39:59   12.00  n/a     .000
      [L/S/n= 2269./ .088/.045]
      {Vmax=  .418:Dmax= 1.281}
#
# Addition of Subwatershed 8 and Hobb's Drain to Node 8
#
R0002:C00047------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:N8         31561.00   34.173 No_date   39:59   12.00  n/a     .000
                     +     1.0 02:SW_8         131.00     .805 No_date   28:57   11.22  n/a     .000
                     +     1.0 02:HB_DR       3854.00    6.242 No_date   38:46   11.98  n/a     .000
                  SUM=     1.0 01:S_N8       35546.00   40.474 No_date   39:59   12.00  n/a     .000
#
# Sum of hydrographs from Node 8 routed to Node 7
# Section 4
#
R0002:C00048------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->     1.0 02:S_N8       35546.00   40.474 No_date   39:59   12.00  n/a     .000
     [RDT= 1.00] out<-     1.0 01:N7         35546.00   32.891 No_date   44:30   12.00  n/a     .000
      [L/S/n= 3750./ .053/.070]
      {Vmax=  .208:Dmax= 1.651}
#
# Addition of Subwatershed 7 to Node 7
#
R0002:C00049------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:N7         35546.00   32.891 No_date   44:30   12.00  n/a     .000
                     +     1.0 02:SW_7        3197.00    4.651 No_date   36:31    9.85  n/a     .000
                  SUM=     1.0 01:S_N7       38743.00   35.071 No_date   43:33   11.82  n/a     .000
R0002:C00050------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD               1.0 01:S_N7       38743.00   35.071 No_date   43:33   11.82  n/a     .000
      fname :H_SN7
      remark:flow at S_N7: N7 + SW_7
# Insertion of a reservoir to simulate the effects of the Richmond Fen.
# Storage area and volumes were estimated from available topo maps.
# Release rate from fen was assumed to be controlled by the downstream
# river cross-section for summer conditions.  It is was assumed that for up to
# 0.75 m of water, the main channel of the river provided the storage.  Above
# this depth, the wetland starts to signigicantly store water.
#
R0002:C00051------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->     1.0 02:S_N7       38743.00   35.071 No_date   43:33   11.82  n/a     .000
                out <=     1.0 01:RES_RF     38743.00   23.265 No_date   55:09   11.82  n/a     .000
     {MxStoUsed=.7801E+02  m3}
R0002:C00052------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD               1.0 01:RES_RF     38743.00   23.265 No_date   55:09   11.82  n/a     .000
      fname :H_ResRF
      remark:outflow of Richmond Fen
#
# Sum of hydrographs from Node 7 routed to Node 6
# Section 5
#
R0002:C00053------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->     1.0 02:RES_RF     38743.00   23.265 No_date   55:09   11.82  n/a     .000
     [RDT= 1.00] out<-     1.0 01:N6         38743.00   23.228 No_date   56:38   11.82  n/a     .000
      [L/S/n= 3056./ .082/.025]
      {Vmax=  .432:Dmax=  .808}
#
# Addition of Subwatershed 6 and Van Gaal Drain to Node 6
#
R0002:C00054------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:N6         38743.00   23.228 No_date   56:38   11.82  n/a     .000
                     +     1.0 02:SW_6         165.00     .413 No_date   33:07   12.24  n/a     .000
                     +     1.0 02:VG_DR       1332.00    3.148 No_date   35:23   13.94  n/a     .000
                  SUM=     1.0 01:S_N6       40240.01   23.318 No_date   39:59   11.89  n/a     .000
#
# Sum of hydrographs from Node 6 routed to Node 5
# Section 6
#
R0002:C00055------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->     1.0 02:S_N6       40240.01   23.318 No_date   39:59   11.89  n/a     .000
     [RDT= 1.00] out<-     1.0 01:N5         40240.01   23.285 No_date   56:09   11.89  n/a     .000
      [L/S/n= 1852./ .054/.035]
      {Vmax=  .378:Dmax=  .917}
#
# Addition of Subwatershed 5 and Flowing Creek to Node 5
#
R0002:C00056------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:N5         40240.01   23.285 No_date   56:09   11.89  n/a     .000
                     +     1.0 02:SW_5         224.00    2.597 No_date   28:45   15.91  n/a     .000
                     +     1.0 02:FL_CK       4945.00   14.839 No_date   33:25   14.57  n/a     .000
                  SUM=     1.0 01:S_N5       45409.01   33.166 No_date   37:08   12.20  n/a     .000
#
# Sum of hydrographs from Node 5 routed to Node 5A
# Section 7
#
R0002:C00057------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->     1.0 02:S_N5       45409.01   33.166 No_date   37:08   12.20  n/a     .000
     [RDT= 1.00] out<-     1.0 01:N5A        45409.01   33.135 No_date   37:20   12.20  n/a     .000
      [L/S/n=  556./ .090/.040]
      {Vmax=  .443:Dmax=  .937}
#
# Addition of Subwatershed 5A1 and Subwatershed 5A2 to Node 5A
#
R0002:C00058------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:N5A        45409.01   33.135 No_date   37:20   12.20  n/a     .000
                     +     1.0 02:SW_5A2        20.00     .309 No_date   28:36   17.79  n/a     .000
                     +     1.0 02:SW_5A1      1412.00    3.090 No_date   38:04   15.22  n/a     .000
                  SUM=     1.0 01:S_N5A      46841.01   36.236 No_date   37:28   12.30  n/a     .000
#
# Sum of hydrographs from Node 5A routed to Node 4
# Section 8
#
R0002:C00059------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->     1.0 02:S_N5A      46841.01   36.236 No_date   37:28   12.30  n/a     .000
     [RDT= 1.00] out<-     1.0 01:N4         46841.01   35.288 No_date   39:22   12.30  n/a     .000
      [L/S/n= 4630./ .043/.035]
      {Vmax=  .695:Dmax= 2.844}
#
# Addition of Subwatershed 4 and Leamy Creek to Node 4
#
R0002:C00060------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:N4         46841.01   35.288 No_date   39:22   12.30  n/a     .000
                     +     1.0 02:SW_4         585.00    4.325 No_date   29:58   17.79  n/a     .000
                     +     1.0 02:LM_CK       1021.00    5.747 No_date   30:50   17.39  n/a     .000
                  SUM=     1.0 01:S_N4       48447.00   37.581 No_date   38:13   12.47  n/a     .000
R0002:C00061------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD               1.0 01:S_N4       48447.00   37.581 No_date   38:13   12.47  n/a     .000
      fname :S_N4.0002
      remark:flow at S_N4
#
# Sum of hydrographs from Node 4 routed to Node 2
# Section 9
#
R0002:C00062------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->     1.0 02:S_N4       48447.00   37.581 No_date   38:13   12.47  n/a     .000
     [RDT= 1.00] out<-     1.0 01:N2         48447.00   37.455 No_date   38:49   12.47  n/a     .000
      [L/S/n= 1667./ .060/.040]
      {Vmax=  .715:Dmax= 2.845}
#
# Addition of Subwatershed 2 with Monohan Drain and Smith Drain to Node 2
#
R0002:C00063------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:N2         48447.00   37.455 No_date   38:49   12.47  n/a     .000
                     +     1.0 02:SW_2         177.00    2.052 No_date   28:45   15.91  n/a     .000
                     +     1.0 02:SM_DR       1122.00    5.337 No_date   31:50   17.79  n/a     .000
                     +     1.0 02:MO_DR       2737.00   11.528 No_date   31:35   15.56  n/a     .000
                  SUM=     1.0 01:S_N2       52483.00   46.294 No_date   33:33   12.76  n/a     .000
R0002:C00064------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD               1.0 01:S_N2       52483.00   46.294 No_date   33:33   12.76  n/a     .000
      fname :H_SN2
      remark:flow at S_N2 Jock River Gauge at Moodie Dr.
#
# Sum of hydrographs from Node 2 routed to Node 1
# Section 10
#
#****************************************************************************
#
# Hydrograph from Node 2 routed to Node 416
# Channel X-Section obtained from RVCA Hydraulic Model - Station 9025
#
R0002:C00065------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->     1.0 02:S_N2       52483.00   46.294 No_date   33:33   12.76  n/a     .000
     [RDT= 1.00] out<-     1.0 01:N_416      52483.00   45.431 No_date   35:37   12.76  n/a     .000
      [L/S/n= 2327./ .050/.055]
      {Vmax=  .577:Dmax= 2.212}
#****************************************************************************
#    Catchment SW-1a
#    - Portion of RVCA catchment SW_1 outside of Reach 1 subwatershed
#    - Undeveloped agricultural land
#****************************************************************************
R0002:C00066------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD      1.0 01:SW_1a        536.42    1.885 No_date   31:21   13.01 .286     .000
      [CN= 72.0: N= 3.00: Tp= 2.79]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
R0002:C00067------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD    1.0 01:S-1-Okeefe    44.93    3.420 No_date   28:04   32.20 .707     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .75:LGI= 547.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0002:C00068------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:N_416      52483.00   45.431 No_date   35:37   12.76  n/a     .000
                     +     1.0 02:SW_1a        536.42    1.885 No_date   31:21   13.01  n/a     .000
                     +     1.0 02:S-1-Okeefe    44.93    3.420 No_date   28:04   32.20  n/a     .000
                  SUM=     1.0 01:SN_416     53064.36   46.619 No_date   35:24   12.78  n/a     .000
R0002:C00069------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD               1.0 01:SN_416     53064.36   46.619 No_date   35:24   12.78  n/a     .000
      fname :SN_416.0002
      remark:Total Flows at Highway 416
#
# Hydrograph from Node 416 routed to Node at Okeefe drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 7245
#
R0002:C00070------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->     1.0 02:SN_416     53064.36   46.619 No_date   35:24   12.78  n/a     .000
     [RDT= 1.00] out<-     1.0 01:N_OK       53064.36   46.610 No_date   35:24   12.78  n/a     .000
      [L/S/n=  497./ .302/.055]
      {Vmax= 1.190:Dmax= 1.879}
#****************************************************************************
#    Catchment OKEEFE
#    - To O'Keefe drain (north of the Jock)
#    - Developed with assumed 43% imp.
#    - 2020-12-01 add Okeefe model (Area 513.02 HA) instead of current Okeefe (Area 513.02 HA)
#    - 2020-11-20 Okeefe detailed model was added as per the NOVATECH SWMHYMO model (Citi-Gate 2014).
#****************************************************************************
R0002:C00071------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD      1.0 01:O-1           63.72     .305 No_date   28:59    9.62 .211     .000
      [CN= 61.0: N= 3.00: Tp=  .90]
      [IaREC= 4.00: SMIN= 64.50: SMAX=430.01: SK= .010]
      [InterEventTime=  12.00]
R0002:C00072------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->     1.0 02:O-1           63.72     .305 No_date   28:59    9.62  n/a     .000
     [RDT= 1.00] out<-     1.0 01:O-1R          63.72     .272 No_date   29:20    9.62  n/a     .000
      [L/S/n=  960./ .630/.043]
      {Vmax=  .589:Dmax=  .212}
R0002:C00073------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD      1.0 01:O-2           28.61     .110 No_date   29:14    9.11 .200     .000
      [CN= 57.0: N= 3.00: Tp= 1.10]
      [IaREC= 4.00: SMIN= 76.32: SMAX=508.81: SK= .010]
      [InterEventTime=  12.00]
R0002:C00074------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD      1.0 01:O-4           46.94     .126 No_date   29:02    7.06 .155     .000
      [CN= 49.0: N= 3.00: Tp=  .90]
      [IaREC= 4.00: SMIN=104.59: SMAX=697.25: SK= .010]
      [InterEventTime=  12.00]
R0002:C00075------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:O-1R          63.72     .272 No_date   29:20    9.62  n/a     .000
                     +     1.0 02:O-2           28.61     .110 No_date   29:14    9.11  n/a     .000
                     +     1.0 02:O-4           46.94     .126 No_date   29:02    7.06  n/a     .000
                  SUM=     1.0 01:OKF-N        139.27     .504 No_date   29:15    8.65  n/a     .000
R0002:C00076------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->     1.0 02:OKF-N        139.27     .504 No_date   29:15    8.65  n/a     .000
     [RDT= 1.00] out<-     1.0 01:OKF-NR       139.27     .502 No_date   29:20    8.65  n/a     .000
      [L/S/n=  210./ .810/.043]
      {Vmax=  .722:Dmax=  .437}
R0002:C00077------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD      1.0 01:O-6           16.46     .042 No_date   28:47    6.40 .141     .000
      [CN= 43.0: N= 3.00: Tp=  .70]
      [IaREC= 4.00: SMIN=134.47: SMAX=896.47: SK= .010]
      [InterEventTime=  12.00]
R0002:C00078------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD    1.0 01:O-3           39.67     .402 No_date   28:28   11.03 .242     .000
      [XIMP=.15:TIMP=.30]
      [LOSS= 2 :CN= 50.0]
      [Pervious     area: IAper= 4.67:SLPP= .32:LGP= 440.:MNP=.035:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .32:LGI=1880.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 99.77: SMAX=665.12: SK= .010]
R0002:C00079------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD    1.0 01:O-5           60.63     .937 No_date   28:10   12.08 .265     .000
      [XIMP=.13:TIMP=.26]
      [LOSS= 2 :CN= 61.0]
      [Pervious     area: IAper= 4.67:SLPP=1.38:LGP= 550.:MNP=.035:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.38:LGI=1450.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 64.50: SMAX=430.01: SK= .010]
R0002:C00080------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:OKF-NR       139.27     .502 No_date   29:20    8.65  n/a     .000
                     +     1.0 02:O-3           39.67     .402 No_date   28:28   11.03  n/a     .000
                     +     1.0 02:O-5           60.63     .937 No_date   28:10   12.08  n/a     .000
                     +     1.0 02:O-6           16.46     .042 No_date   28:47    6.40  n/a     .000
                  SUM=     1.0 01:PT1          256.03    1.441 No_date   28:30    9.69  n/a     .000
R0002:C00081------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD      1.0 01:O-7            5.28     .024 No_date   28:38    8.02 .176     .000
      [CN= 54.0: N= 3.00: Tp=  .60]
      [IaREC= 4.00: SMIN= 87.01: SMAX=580.07: SK= .010]
      [InterEventTime=  12.00]
R0002:C00082------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:PT1          256.03    1.441 No_date   28:30    9.69  n/a     .000
                     +     1.0 02:O-7            5.28     .024 No_date   28:38    8.02  n/a     .000
                  SUM=     1.0 01:FF           261.31    1.465 No_date   28:30    9.65  n/a     .000
R0002:C00083------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->     1.0 02:FF           261.31    1.465 No_date   28:30    9.65  n/a     .000
     [RDT= 1.00] out<-     1.0 01:DRAIN1       261.31    1.446 No_date   28:36    9.65  n/a     .000
      [L/S/n=  302./1.000/.043]
      {Vmax=  .953:Dmax=  .543}
R0002:C00084------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD      1.0 01:D1             1.17     .026 No_date   28:12   15.66 .344     .000
      [CN= 84.0: N= 3.00: Tp=  .28]
      [IaREC= 4.00: SMIN= 21.09: SMAX=140.62: SK= .010]
      [InterEventTime=  12.00]
R0002:C00085------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD    1.0 01:A1             2.50     .256 No_date   28:01   34.35 .755     .000
      [XIMP=.68:TIMP=.85]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 224.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00086------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->     1.0 02:A1             2.50     .256 No_date   28:01   34.35  n/a     .000
                out <=     1.0 01:A1-STR         2.50     .048 No_date   28:35   34.35  n/a     .000
           overflow <=     1.0 03:A1-OVF          .00     .000 No_date    0:00     .00  n/a     .000
      {MxStoUsed=.4261E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00087------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD    1.0 01:ST-2            .59     .044 No_date   28:00   25.32 .556     .000
      [XIMP=.46:TIMP=.57]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 109.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00088------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->     1.0 02:ST-2            .59     .044 No_date   28:00   25.32  n/a     .000
                out <=     1.0 01:ST2STR          .59     .041 No_date   28:02   25.32  n/a     .000
           overflow <=     1.0 03:ST2OVF          .00     .000 No_date    0:00     .00  n/a     .000
      {MxStoUsed=.7924E-03  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00089------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD      1.0 01:O-8           60.55     .405 No_date   29:05   12.46 .274     .000
      [CN= 69.0: N= 3.00: Tp= 1.00]
      [IaREC= 4.00: SMIN= 44.82: SMAX=298.82: SK= .010]
      [InterEventTime=  12.00]
R0002:C00090------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->     1.0 02:O-8           60.55     .405 No_date   29:05   12.46  n/a     .000
     [RDT= 1.00] out<-     1.0 01:O8PIPE        60.55     .402 No_date   29:10   12.46  n/a     .000
      [L/S/n=  335./ .100/.013]
      {Vmax=  .842:Dmax=  .265}
      {HGTH= 1.20:WDTH= 1.80}
R0002:C00091------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:DRAIN1       261.31    1.446 No_date   28:36    9.65  n/a     .000
                     +     1.0 02:D1             1.17     .026 No_date   28:12   15.66  n/a     .000
                     +     1.0 02:A1-STR         2.50     .048 No_date   28:35   34.35  n/a     .000
                     +     1.0 02:A1-OVF          .00     .000 No_date    0:00     .00  n/a     .000
                     +     1.0 02:ST2STR          .59     .041 No_date   28:02   25.32  n/a     .000
                     +     1.0 02:ST2OVF          .00     .000 No_date    0:00     .00  n/a     .000
                     +     1.0 02:O8PIPE        60.55     .402 No_date   29:10   12.46  n/a     .000
                  SUM=     1.0 01:ST2-IN       326.12    1.834 No_date   28:39   10.41  n/a     .000
R0002:C00092------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD    1.0 01:A7             3.51     .348 No_date   28:02   34.35 .755     .000
```

```
          [XIMP=.68:TIMP=.85]
          [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
          [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
          [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 265.:MNI=.013:SCI=   .0]
          [IaRECimp=   4.00: IaRECper=   4.00]
 R0002:C00093------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
        ROUTE RESERVOIR ->    1.0 02:A7             3.51     .348 No_date   28:02   34.35  n/a      .000
                    out <=    1.0 01:A7-STR         3.51     .067 No_date   28:36   34.35  n/a      .000
               overflow <=    1.0 03:A7-OVF          .00     .000 No_date    0:00     .00  n/a      .000
        {MxStoUsed=.6002E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
 R0002:C00094------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
        CONTINUOUS STANDHYD   1.0 01:ST-3            .71     .053 No_date   28:00   25.32 .556      .000
          [XIMP=.46:TIMP=.57]
          [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
          [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
          [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 119.:MNI=.013:SCI=   .0]
          [IaRECimp=   4.00: IaRECper=   4.00]
 R0002:C00095------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
        ROUTE RESERVOIR ->    1.0 02:ST-3            .71     .053 No_date   28:00   25.32  n/a      .000
                    out <=    1.0 01:ST3STR          .71     .050 No_date   28:02   25.32  n/a      .000
               overflow <=    1.0 03:ST3OVF          .00     .000 No_date    0:00     .00  n/a      .000
        {MxStoUsed=.7947E-03  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
 R0002:C00096------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
        ADD HYD               1.0 02:ST2-IN       326.12    1.834 No_date   28:39   10.41  n/a      .000
                        +     1.0 02:A7-STR         3.51     .067 No_date   28:36   34.35  n/a      .000
                        +     1.0 02:A7-OVF          .00     .000 No_date    0:00     .00  n/a      .000
                        +     1.0 02:ST3STR          .71     .050 No_date   28:02   25.32  n/a      .000
                        +     1.0 02:ST3OVF          .00     .000 No_date    0:00     .00  n/a      .000
                     SUM=     1.0 01:PT2ST3       330.34    1.912 No_date   28:38   10.70  n/a      .000
 R0002:C00097------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
        ROUTE CHANNEL   ->    1.0 02:PT2ST3       330.34    1.912 No_date   28:38   10.70  n/a      .000
         [RDT= 1.00] out<-    1.0 01:DRAIN2       330.34    1.821 No_date   28:57   10.70  n/a      .000
          [L/S/n=  592./ .230/.043]
          {Vmax=  .681:Dmax=  .785}
 R0002:C00098------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
        CONTINUOUS NASHYD     1.0 01:D2             2.28     .021 No_date   29:07   15.66 .344      .000
          [CN= 84.0: N= 3.00: Tp=  .99]
          [IaREC= 4.00: SMIN= 21.09: SMAX=140.62: SK= .010]
          [InterEventTime=  12.00]
 R0002:C00099------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
        CONTINUOUS STANDHYD   1.0 01:A17           12.04    1.030 No_date   28:04   34.35 .755      .000
          [XIMP=.68:TIMP=.85]
          [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
          [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
          [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 491.:MNI=.013:SCI=   .0]
          [IaRECimp=   4.00: IaRECper=   4.00]
 R0002:C00100------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
        ROUTE RESERVOIR ->    1.0 02:A17           12.04    1.030 No_date   28:04   34.35  n/a      .000
                    out <=    1.0 01:A17STR        12.04     .220 No_date   28:42   34.35  n/a      .000
               overflow <=    1.0 03:A17OVF          .00     .000 No_date    0:00     .00  n/a      .000
        {MxStoUsed=.2030E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
 R0002:C00101------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
        CONTINUOUS STANDHYD   1.0 01:ST-4            .35     .027 No_date   28:00   25.32 .556      .000
          [XIMP=.46:TIMP=.57]
          [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
          [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
          [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=  84.:MNI=.013:SCI=   .0]
          [IaRECimp=   4.00: IaRECper=   4.00]
 R0002:C00102------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
        ROUTE RESERVOIR ->    1.0 02:ST-4            .35     .027 No_date   28:00   25.32  n/a      .000
                    out <=    1.0 01:ST4STR          .35     .023 No_date   28:03   25.32  n/a      .000
               overflow <=    1.0 03:ST4OVF          .00     .000 No_date    0:00     .00  n/a      .000
        {MxStoUsed=.7487E-03  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
 R0002:C00103------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
        CONTINUOUS STANDHYD   1.0 01:A18            5.30     .500 No_date   28:03   34.35 .755      .000
          [XIMP=.68:TIMP=.85]
          [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
          [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
          [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 326.:MNI=.013:SCI=   .0]
          [IaRECimp=   4.00: IaRECper=   4.00]
 R0002:C00104------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
        ROUTE RESERVOIR ->    1.0 02:A18            5.30     .500 No_date   28:03   34.35  n/a      .000
                    out <=    1.0 01:A18STR         5.30     .099 No_date   28:38   34.35  n/a      .000
               overflow <=    1.0 03:A18OVF          .00     .000 No_date    0:00     .00  n/a      .000
        {MxStoUsed=.9042E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
 R0002:C00105------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
        ADD HYD               1.0 02:DRAIN2       330.34    1.821 No_date   28:57   10.70  n/a      .000
                        +     1.0 02:D2             2.28     .021 No_date   29:07   15.66  n/a      .000
                        +     1.0 02:A17STR        12.04     .220 No_date   28:42   34.35  n/a      .000
                        +     1.0 02:A17OVF          .00     .000 No_date    0:00     .00  n/a      .000
                        +     1.0 02:ST4STR          .35     .023 No_date   28:03   25.32  n/a      .000
                        +     1.0 02:ST4OVF          .00     .000 No_date    0:00     .00  n/a      .000
                        +     1.0 02:A18STR         5.30     .099 No_date   28:38   34.35  n/a      .000
                        +     1.0 02:A18OVF          .00     .000 No_date    0:00     .00  n/a      .000
                     SUM=     1.0 01:PT3ST4       350.31    2.146 No_date   28:54   11.92  n/a      .000
 R0002:C00106------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
        ROUTE CHANNEL   ->    1.0 02:PT3ST4       350.31    2.146 No_date   28:54   11.92  n/a      .000
         [RDT= 1.00] out<-    1.0 01:DRAIN3       350.31    2.088 No_date   29:08   11.92  n/a      .000
          [L/S/n=  525./ .230/.043]
          {Vmax=  .707:Dmax=  .833}
 R0002:C00107------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
        CONTINUOUS NASHYD     1.0 01:D3             2.51     .033 No_date   28:46   17.40 .382      .000
          [CN= 86.0: N= 3.00: Tp=  .73]
          [IaREC= 4.00: SMIN= 17.43: SMAX=116.21: SK= .010]
          [InterEventTime=  12.00]
 R0002:C00108------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
        CONTINUOUS STANDHYD   1.0 01:C1             3.41     .339 No_date   28:02   34.35 .755      .000
          [XIMP=.68:TIMP=.85]
          [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
          [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
          [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 261.:MNI=.013:SCI=   .0]
          [IaRECimp=   4.00: IaRECper=   4.00]
 R0002:C00109------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
        ROUTE RESERVOIR ->    1.0 02:C1             3.41     .339 No_date   28:02   34.35  n/a      .000
                    out <=    1.0 01:C1-STR         3.41     .065 No_date   28:36   34.35  n/a      .000
               overflow <=    1.0 03:C1-OVF          .00     .000 No_date    0:00     .00  n/a      .000
        {MxStoUsed=.5806E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
 R0002:C00110------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
        CONTINUOUS STANDHYD   1.0 01:ST-5            .45     .034 No_date   28:00   25.32 .556      .000
          [XIMP=.46:TIMP=.57]
          [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
          [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
          [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=  95.:MNI=.013:SCI=   .0]
          [IaRECimp=   4.00: IaRECper=   4.00]
 R0002:C00111------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
        ROUTE RESERVOIR ->    1.0 02:ST-5            .45     .034 No_date   28:00   25.32  n/a      .000
                    out <=    1.0 01:ST5STR          .45     .031 No_date   28:03   25.32  n/a      .000
               overflow <=    1.0 03:ST5OVF          .00     .000 No_date    0:00     .00  n/a      .000
        {MxStoUsed=.7682E-03  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
 R0002:C00112------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
        ADD HYD               1.0 02:DRAIN3       350.31    2.088 No_date   29:08   11.92  n/a      .000
                        +     1.0 02:D3             2.51     .033 No_date   28:46   17.40  n/a      .000
                        +     1.0 02:C1-STR         3.41     .065 No_date   28:36   34.35  n/a      .000
                        +     1.0 02:C1-OVF          .00     .000 No_date    0:00     .00  n/a      .000
                        +     1.0 02:ST5STR          .45     .031 No_date   28:03   25.32  n/a      .000
                        +     1.0 02:ST5OVF          .00     .000 No_date    0:00     .00  n/a      .000
                     SUM=     1.0 01:ST5-E        356.68    2.174 No_date   29:07   12.19  n/a      .000
 R0002:C00113------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
        CONTINUOUS STANDHYD   1.0 01:STRAND         7.59     .471 No_date   28:13   33.47 .735      .000
          [XIMP=.64:TIMP=.85]
          [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
          [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  40.:MNP=.250:SCP=   .0]
          [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1230.:MNI=.013:SCI=   .0]
          [IaRECimp=   4.00: IaRECper=   4.00]
 R0002:C00114------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
        ROUTE RESERVOIR ->    1.0 02:STRAND         7.59     .471 No_date   28:13   33.47  n/a      .000
                    out <=    1.0 01:S-POND         7.59     .032 No_date   30:14   33.47  n/a      .000
               overflow <=    1.0 03:S-OVF           .00     .000 No_date    0:00     .00  n/a      .000
        {MxStoUsed=.1805E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
 R0002:C00115------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
        ADD HYD               1.0 02:ST5-E        356.68    2.174 No_date   29:07   12.19  n/a      .000
                        +     1.0 02:S-POND         7.59     .032 No_date   30:14   33.47  n/a      .000
                        +     1.0 02:S-OVF           .00     .000 No_date    0:00     .00  n/a      .000
                     SUM=     1.0 01:SSAOUT       364.27    2.204 No_date   29:07   12.63  n/a      .000
 R0002:C00116------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
        SAVE HYD              1.0 01:SSAOUT       364.27    2.204 No_date   29:07   12.63  n/a      .000
          fname :SSAOUT.0002
          remark:SSAOUT
 R0002:C00117------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
        CONTINUOUS STANDHYD   1.0 01:Area-A        66.75    3.902 No_date   28:13   32.66 .718      .000
          [XIMP=.64:TIMP=.80]
          [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
          [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
          [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1155.:MNI=.013:SCI=   .0]
          [IaRECimp=   4.00: IaRECper=   4.00]
 R0002:C00118------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
        SAVE HYD              1.0 01:Area-A        66.75    3.902 No_date   28:13   32.66  n/a      .000
          fname :Area-A.0002
          remark:SMWF-A Inflow
 R0002:C00119------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
        ROUTE RESERVOIR ->    1.0 02:Area-A        66.75    3.902 No_date   28:13   32.66  n/a      .000
                    out <=    1.0 01:SWMF-A        66.75     .126 No_date   32:26   32.66  n/a      .000
               overflow <=    1.0 03:SWMAOV          .00     .000 No_date    0:00     .00  n/a      .000
        {MxStoUsed=.1708E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
 R0002:C00120------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
        SAVE HYD              1.0 01:SWMF-A        66.75     .126 No_date   32:26   32.66  n/a      .000
          fname :SWMF-A.0002
          remark:SMWF-A Outflow
 R0002:C00121------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
        ADD HYD               1.0 02:SSAOUT       364.27    2.204 No_date   29:07   12.63  n/a      .000
                        +     1.0 02:SWMF-A        66.75     .126 No_date   32:26   32.66  n/a      .000
                        +     1.0 02:SWMAOV          .00     .000 No_date    0:00     .00  n/a      .000
                     SUM=     1.0 01:PT4ST5       431.02    2.323 No_date   29:07   15.73  n/a      .000
 R0002:C00122------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
        CONTINUOUS STANDHYD   1.0 01:C6             1.87     .196 No_date   28:01   34.35 .755      .000
          [XIMP=.68:TIMP=.85]
          [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
          [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
          [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 193.:MNI=.013:SCI=   .0]
          [IaRECimp=   4.00: IaRECper=   4.00]
 R0002:C00123------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
        ROUTE RESERVOIR ->    1.0 02:C6             1.87     .196 No_date   28:01   34.35  n/a      .000
                    out <=    1.0 01:C6-STR         1.87     .036 No_date   28:34   34.35  n/a      .000
               overflow <=    1.0 03:C6-OVF          .00     .000 No_date    0:00     .00  n/a      .000
        {MxStoUsed=.3218E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
 R0002:C00124------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
        CONTINUOUS STANDHYD   1.0 01:C7             1.62     .171 No_date   28:01   34.35 .755      .000
```

```
          [XIMP=.68:TIMP=.85]
          [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
          [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
          [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 180.:MNI=.013:SCI=   .0]
          [IaRECimp=   4.00: IaRECper=   4.00]
 R0002:C00125------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
        ROUTE RESERVOIR ->    1.0 02:C7             1.62     .171 No_date   28:01   34.35  n/a      .000
                    out <=    1.0 01:C7-STR         1.62     .031 No_date   28:34   34.35  n/a      .000
               overflow <=    1.0 03:C7-OVF          .00     .000 No_date    0:00     .00  n/a      .000
        {MxStoUsed=.2774E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
 R0002:C00126------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
        CONTINUOUS STANDHYD   1.0 01:ST-6            .41     .031 No_date   28:00   25.32 .556      .000
          [XIMP=.46:TIMP=.57]
          [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
          [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
          [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=  91.:MNI=.013:SCI=   .0]
          [IaRECimp=   4.00: IaRECper=   4.00]
 R0002:C00127------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
        ROUTE RESERVOIR ->    1.0 02:ST-6            .41     .031 No_date   28:00   25.32  n/a      .000
                    out <=    1.0 01:ST6STR          .41     .028 No_date   28:03   25.32  n/a      .000
               overflow <=    1.0 03:ST6OVF          .00     .000 No_date    0:00     .00  n/a      .000
        {MxStoUsed=.7725E-03  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
 R0002:C00128------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
        ADD HYD               1.0 02:PT4ST5       431.02    2.323 No_date   29:07   15.73  n/a      .000
                        +     1.0 02:C6-STR         1.87     .036 No_date   28:34   34.35  n/a      .000
                        +     1.0 02:C6-OVF          .00     .000 No_date    0:00     .00  n/a      .000
                        +     1.0 02:C7-STR         1.62     .031 No_date   28:34   34.35  n/a      .000
                        +     1.0 02:C7-OVF          .00     .000 No_date    0:00     .00  n/a      .000
                        +     1.0 02:ST6STR          .41     .028 No_date   28:03   25.32  n/a      .000
                        +     1.0 02:ST6OVF          .00     .000 No_date    0:00     .00  n/a      .000
                     SUM=     1.0 01:PT5ST6       434.92    2.379 No_date   29:06   15.89  n/a      .000
 R0002:C00129------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
        ROUTE CHANNEL   ->    1.0 02:PT5ST6       434.92    2.379 No_date   29:06   15.89  n/a      .000
         [RDT= 1.00] out<-    1.0 01:DRAIN4       434.92    2.319 No_date   29:17   15.89  n/a      .000
          [L/S/n=  324./ .100/.043]
          {Vmax=  .532:Dmax= 1.041}
 R0002:C00130------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
        CONTINUOUS NASHYD     1.0 01:D4             1.73     .030 No_date   28:36   18.93 .416      .000
          [CN= 88.0: N= 3.00: Tp=  .60]
          [IaREC= 4.00: SMIN= 14.94: SMAX= 99.61: SK= .010]
          [InterEventTime=  12.00]
 R0002:C00131------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
        CONTINUOUS STANDHYD   1.0 01:Area-B        24.04    2.028 No_date   28:04   31.71 .697      .000
          [XIMP=.62:TIMP=.77]
          [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
          [Pervious     area: IAper= 4.67:SLPP=1.40:LGP=  50.:MNP=.250:SCP=   .0]
          [Impervious   area: IAimp= 1.57:SLPI=1.40:LGI= 693.:MNI=.013:SCI=   .0]
          [IaRECimp=   4.00: IaRECper=   4.00]
 R0002:C00132------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
        ROUTE RESERVOIR ->    1.0 02:Area-B        24.04    2.028 No_date   28:04   31.71  n/a      .000
                    out <=    1.0 01:SWMF-B        24.04     .169 No_date   29:09   31.71  n/a      .000
               overflow <=    1.0 03:SWMBOVF         .00     .000 No_date    0:00     .00  n/a      .000
        {MxStoUsed=.4926E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
 R0002:C00133------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
        ADD HYD               1.0 02:DRAIN4       434.92    2.319 No_date   29:17   15.89  n/a      .000
                        +     1.0 02:D4             1.73     .030 No_date   28:36   18.93  n/a      .000
                        +     1.0 02:SWMF-B        24.04     .169 No_date   29:09   31.71  n/a      .000
                        +     1.0 02:SWMBOVF         .00     .000 No_date    0:00     .00  n/a      .000
                     SUM=     1.0 01:D4-EX        460.69    2.507 No_date   29:17   16.73  n/a      .000
 R0002:C00134------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
        ROUTE CHANNEL   ->    1.0 02:D4-EX        460.69    2.507 No_date   29:17   16.73  n/a      .000
         [RDT= 1.00] out<-    1.0 01:DRAIN5       460.69    2.448 No_date   29:30   16.73  n/a      .000
          [L/S/n=  413./ .160/.033]
          {Vmax=  .501:Dmax=  .708}
 R0002:C00135------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
        CONTINUOUS NASHYD     1.0 01:D5             1.90     .026 No_date   28:43   17.40 .382      .000
          [CN= 86.0: N= 3.00: Tp=  .69]
          [IaREC= 4.00: SMIN= 17.43: SMAX=116.21: SK= .010]
          [InterEventTime=  12.00]
 R0002:C00136------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
        CONTINUOUS NASHYD     1.0 01:O-13SDF        9.74     .182 No_date   28:22   16.95 .372      .000
          [CN= 81.0: N= 3.00: Tp=  .43]
          [IaREC= 4.00: SMIN= 25.21: SMAX=168.09: SK= .010]
          [InterEventTime=  12.00]
 R0002:C00137------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
        ROUTE RESERVOIR ->    1.0 02:O-13SDF        9.74     .182 No_date   28:22   16.95  n/a      .000
                    out <=    1.0 01:SDF            9.74     .021 No_date   32:19   16.95  n/a      .000
               overflow <=    1.0 03:OVFSDF          .00     .000 No_date    0:00     .00  n/a      .000
        {MxStoUsed=.8320E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
 R0002:C00138------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
        ADD HYD               1.0 02:DRAIN5       460.69    2.448 No_date   29:30   16.73  n/a      .000
                        +     1.0 02:D5             1.90     .026 No_date   28:43   17.40  n/a      .000
                        +     1.0 02:SDF            9.74     .021 No_date   32:19   16.95  n/a      .000
                     SUM=     1.0 01:PT6MC        472.33    2.484 No_date   29:30   16.73  n/a      .000
 R0002:C00139------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
        CONTINUOUS NASHYD     1.0 01:O-15          10.67     .230 No_date   28:14   15.77 .347      .000
          [CN= 82.0: N= 3.00: Tp=  .30]
          [IaREC= 4.00: SMIN= 23.09: SMAX=153.94: SK= .010]
          [InterEventTime=  12.00]
 R0002:C00140------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
        ADD HYD               1.0 02:PT6MC        472.33    2.484 No_date   29:30   16.73  n/a      .000
                        +     1.0 02:O-15          10.67     .230 No_date   28:14   15.77  n/a      .000
                     SUM=     1.0 01:M-C          483.00    2.528 No_date   29:29   16.71  n/a      .000
 R0002:C00141------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
        ROUTE CHANNEL   ->    1.0 02:M-C          483.00    2.528 No_date   29:29   16.71  n/a      .000
         [RDT= 1.00] out<-    1.0 01:O-14Ch       483.00    2.419 No_date   29:44   16.71  n/a      .000
          [L/S/n=  845./ .100/.033]
          {Vmax=  .756:Dmax= 1.160}
 R0002:C00142------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
        CONTINUOUS NASHYD     1.0 01:O-14           5.00     .181 No_date   28:04   15.77 .347      .000
          [CN= 82.0: N= 3.00: Tp=  .13]
          [IaREC= 4.00: SMIN= 23.09: SMAX=153.94: SK= .010]
          [InterEventTime=  12.00]
 R0002:C00143------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
        ADD HYD               1.0 02:O-14Ch       483.00    2.419 No_date   29:44   16.71  n/a      .000
                        +     1.0 02:O-14           5.00     .181 No_date   28:04   15.77  n/a      .000
                     SUM=     1.0 01:OKEEFE       488.00    2.434 No_date   29:44   16.70  n/a      .000
 #****************************************************************************
 #    Okeefe Pond
 #    - Rating curve obtained assuming 40m3/ha in 24 hours for quality control
 #      and a ratio of the catchment area to the West Clarke pond rating curve
 #      from the MSS for the next coordinates
 #****************************************************************************
 R0002:C00144------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
        CONTINUOUS STANDHYD   1.0 01:S-1-D2        18.67    1.588 No_date   28:02   32.20 .707      .000
          [XIMP=.65:TIMP=.65]
          [LOSS= 2 :CN= 75.0]
          [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
          [Impervious   area: IAimp= 1.57:SLPI= .75:LGI= 353.:MNI=.013:SCI=   .0]
          [IaRECimp=   4.00: IaRECper=   4.00]
          [SMIN= 33.81: SMAX=225.43: SK= .010]
 R0002:C00145------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
        CONTINUOUS STANDHYD   1.0 01:S-1-D3         6.79     .628 No_date   28:01   32.20 .707      .000
          [XIMP=.65:TIMP=.65]
          [LOSS= 2 :CN= 75.0]
          [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
          [Impervious   area: IAimp= 1.57:SLPI= .75:LGI= 213.:MNI=.013:SCI=   .0]
          [IaRECimp=   4.00: IaRECper=   4.00]
          [SMIN= 33.81: SMAX=225.43: SK= .010]
 R0002:C00146------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
        ADD HYD               1.0 02:N_OK       53064.36   46.610 No_date   35:24   12.78  n/a      .000
                        +     1.0 02:OKEEFE       488.00    2.434 No_date   29:44   16.70  n/a      .000
                        +     1.0 02:S-1-D2        18.67    1.588 No_date   28:02   32.20  n/a      .000
                        +     1.0 02:S-1-D3         6.79     .628 No_date   28:01   32.20  n/a      .000
                     SUM=     1.0 01:SN_OK      53577.82   47.451 No_date   34:58   12.82  n/a      .000
 R0002:C00147------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
        SAVE HYD              1.0 01:SN_OK      53577.82   47.451 No_date   34:58   12.82  n/a      .000
          fname :SN_OK.0002
          remark:Total Flows at Okeefe Drain
 #
 # Hydrograph from Node Okeefe routed to Node at Foster Drain
 # Channel X-Section obtained from RVCA Hydraulic Model - Station 6215
 #
 R0002:C00148------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
        ROUTE CHANNEL   ->    1.0 02:SN_OK      53577.82   47.451 No_date   34:58   12.82  n/a      .000
         [RDT= 1.00] out<-    1.0 01:N_FO       53577.82   47.426 No_date   35:25   12.82  n/a      .000
          [L/S/n= 1183./ .076/.035]
          {Vmax=  .918:Dmax= 2.261}
 #****************************************************************************
 #    Catchment FOSTER
 #    - To Foster ditch (north of the Jock)
 #    - Partially developed (medium density); remaining agricultural
 #    - 2020-12-01 JFSA Foster area is 332 as per Foster SWMF Environmental Study Report, CH2MHILL, Aug 2013.
 #    - 2020-12-01 decrease Foster drainage area from (373 HA) to (307.98 HA) after increasing Okeefe drainage area to (5
 #    - 2021-02-12  update Foster area to 325.44 ha as measured from QGIS
 #****************************************************************************
 R0002:C00149------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
        CONTINUOUS STANDHYD   1.0 01:FOSTER       325.44   13.697 No_date   28:15   28.56 .628      .000
          [XIMP=.55:TIMP=.55]
          [LOSS= 2 :CN= 74.0]
          [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  40.:MNP=.250:SCP=   .0]
          [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1473.:MNI=.013:SCI=   .0]
          [IaRECimp=   4.00: IaRECper=   4.00]
          [SMIN= 36.67: SMAX=244.49: SK= .010]
 #****************************************************************************
 #    Foster Pond
 #    - Rating curve obtained assuming 40m3/ha in 24 hours for quality control
 #      and a ratio of the catchment area to the West Clarke pond rating curve
 #      from the MSS for the next coordinates
 #****************************************************************************
 R0002:C00150------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
        ROUTE RESERVOIR ->    1.0 02:FOSTER       325.44   13.697 No_date   28:15   28.56  n/a      .000
                    out <=    1.0 01:P_FOS        325.44    3.894 No_date   29:12   28.56  n/a      .000
               overflow <=    1.0 03:FO-OVF          .00     .000 No_date    0:00     .00  n/a      .000
        {MxStoUsed=.3766E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
 R0002:C00151------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
        ADD HYD               1.0 02:P_FOS        325.44    3.894 No_date   29:12   28.56  n/a      .000
                        +     1.0 02:FO-OVF          .00     .000 No_date    0:00     .00  n/a      .000
                     SUM=     1.0 01:FOSTER-OUT   325.44    3.894 No_date   29:12   28.56  n/a      .000
 #****************************************************************************
 R0002:C00152------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
        CONTINUOUS STANDHYD   1.0 01:W_CLAR_BRA    73.29    4.584 No_date   28:07   31.34 .689      .000
          [XIMP=.60:TIMP=.65]
          [LOSS= 2 :CN= 77.0]
          [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
          [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 699.:MNI=.013:SCI=   .0]
          [IaRECimp=   4.00: IaRECper=   4.00]
```

```
         [SMIN= 31.15: SMAX=207.66: SK= .010]
R0002:C00153------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:W_CLAR_BRA    73.29    4.584 No_date   28:07   31.34  n/a     .000
                out <=    1.0 01:MS_P10        73.29    1.033 No_date   28:50   31.34  n/a     .000
           overflow <=    1.0 03:P10-OVF         .00     .000 No_date    0:00     .00  n/a     .000
      {MxStoUsed=.7493E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00154------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-FO-D2      4.94     .383 No_date   28:01   28.56 .628     .000
      [XIMP=.55:TIMP=.55]
      [LOSS= 2 :CN= 74.0]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 181.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 36.67: SMAX=244.49: SK= .010]
R0002:C00155------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:FOSTER-OUT   325.44    3.894 No_date   29:12   28.56  n/a     .000
                    +     1.0 02:S-1-FO-D2      4.94     .383 No_date   28:01   28.56  n/a     .000
                 SUM=     1.0 01:980          330.38    3.925 No_date   29:11   28.56  n/a     .000
R0002:C00156------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:980          330.38    3.925 No_date   29:11   28.56  n/a     .000
      fname :980.0002
      remark:Total Flows at Station 980 on Foster Drain
#
# Hydrograph from Node Foster SWM (Station 980)to Node at station 520
# Channel X-Section obtained from RVCA Hydraulic Model - Station 980
#
R0002:C00157------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:980          330.38    3.925 No_date   29:11   28.56  n/a     .000
     [RDT= 1.00] out<-    1.0 01:980-out      330.38    3.801 No_date   29:21   28.56  n/a     .000
      [L/S/n=  460./ .043/.035]
      {Vmax=  .544:Dmax= 1.093}
R0002:C00158------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-FO-D1      5.11     .460 No_date   28:01   31.98 .703     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 74.0]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 185.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 36.67: SMAX=244.49: SK= .010]
R0002:C00159------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:980-out      330.38    3.801 No_date   29:21   28.56  n/a     .000
                    +     1.0 02:S-1-FO-D1      5.11     .460 No_date   28:01   31.98  n/a     .000
                 SUM=     1.0 01:520          335.49    3.832 No_date   29:21   28.62  n/a     .000
R0002:C00160------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:520          335.49    3.832 No_date   29:21   28.62  n/a     .000
      fname :520.0002
      remark:Total Flows at Sation 520 on Foster Drain
# Hydrograph from Node at Station 520 (Foster Drain) to Node at station 6016 (Jock River)
# Channel X-Section obtained from RVCA Hydraulic Model - Station 520
#
R0002:C00161------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:520          335.49    3.832 No_date   29:21   28.62  n/a     .000
     [RDT= 1.00] out<-    1.0 01:520-out      335.49    3.792 No_date   29:34   28.62  n/a     .000
      [L/S/n=  860./ .587/.035]
      {Vmax= 1.197:Dmax=  .521}
R0002:C00162------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-FO-F-D    14.96    1.215 No_date   28:02   31.98 .703     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 74.0]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 316.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 36.67: SMAX=244.49: SK= .010]
R0002:C00163------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-D8         5.27     .475 No_date   28:02   23.32 .512     .000
      [XIMP=.32:TIMP=.65]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI= .75:LGI= 187.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00164------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:S-1-A         75.88     .912 No_date   28:37   14.83 .326     .000
      [CN= 77.0: N= 3.00: Tp=  .62]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0002:C00165------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:W_CLAR_UND    35.65     .286 No_date   29:12   14.83 .326     .000
      [CN= 77.0: N= 3.00: Tp= 1.10]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0002:C00166------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N_FO       53577.82   47.426 No_date   35:25   12.82  n/a     .000
                    +     1.0 02:520-out      335.49    3.792 No_date   29:34   28.62  n/a     .000
                    +     1.0 02:MS_P10        73.29    1.033 No_date   28:50   31.34  n/a     .000
                    +     1.0 02:P10-OVF         .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:W_CLAR_UND    35.65     .286 No_date   29:12   14.83  n/a     .000
                    +     1.0 02:S-1-FO-F-D    14.96    1.215 No_date   28:02   31.98  n/a     .000
                    +     1.0 02:S-1-D8         5.27     .475 No_date   28:02   23.32  n/a     .000
                    +     1.0 02:S-1-A         75.88     .912 No_date   28:37   14.83  n/a     .000
                 SUM=     1.0 01:SN_FO      54118.36   49.014 No_date   34:32   12.96  n/a     .000
R0002:C00167------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_FO      54118.36   49.014 No_date   34:32   12.96  n/a     .000
      fname :SN_FO.0002
      remark:Total Flows at Foster Drain
# Hydrograph from Node Foster routed to Node at Cedarview Road
# Channel X-Section obtained from RVCA Hydraulic Model - Station 6016
#
R0002:C00168------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_FO      54118.36   49.014 No_date   34:32   12.96  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:N_CE       54118.36   49.006 No_date   34:39   12.96  n/a     .000
      [L/S/n=  159./ .082/.035]
      {Vmax= 1.113:Dmax= 2.623}
#**************************************************************************
#    Catchment S-1
#    - To Jock River (north and south of Jock)
#    - Primarily agricultural fields; portion of sand quarry
#**************************************************************************
R0002:C00169------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:S-1-B         55.36     .825 No_date   28:24   14.83 .326     .000
      [CN= 77.0: N= 3.00: Tp=  .45]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
#    -  JFSA 2021-02-24 change the name from S-1-BCDC to S-1-A and S-1-B. Change their TP values based on the new areas
#    -  JFSA 2021-02-24 "S-1-BCDC-1" and "S-1-BCDC-2" are not existing anymore. "S-1-BCDC-1" is part of "S-1-FO-D2" and
#    -  JFSA 2021-01-19, after adding Greenbank pond, "S-1-BCDC-3" is not existing anymore
R0002:C00170------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-D1        21.67    1.802 No_date   28:02   32.20 .707     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .75:LGI= 380.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0002:C00171------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-D4         3.28     .322 No_date   28:00   32.20 .707     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .75:LGI= 148.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0002:C00172------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-D5        12.84    1.124 No_date   28:02   32.20 .707     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .75:LGI= 293.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0002:C00173------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-D6         1.75     .176 No_date   28:00   32.20 .707     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .75:LGI= 108.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0002:C00174------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-D7         2.03     .204 No_date   28:00   32.20 .707     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .75:LGI= 116.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
#    Catchment W_CLAR
#    - To West Clarke Drain (south of the Jock)
#    - Subdivision with 43% imp. as per Barrhaven South MSS
#    - 2020-11-30 update CLARKE Tributary Drainage Area to  = 121 ha based on P598(04)-11
#    - 2020-11-30 split CLARKE Drainage Area to MAJOR and ALL
#**************************************************************************
R0002:C00175------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:W_CLAR_MJ      1.77     .141 No_date   28:00   27.78 .610     .000
      [XIMP=.46:TIMP=.59]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 109.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
# 5-Year + 12% Capture
R0002:C00176------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:W_CLAR_MJ      1.77     .141 No_date   28:00   27.78  n/a     .000
                out <=    1.0 01:W_CLAR_MJn     1.77     .141 No_date   28:00   27.78  n/a     .000
           overflow <=    1.0 03:W_CLAR_MJj      .00     .000 No_date    0:00     .00  n/a     .000
      {MxStoUsed=.6675E-04  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00177------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:W_CLAR_ALL   119.40    7.746 No_date   28:06   31.34 .689     .000
      [XIMP=.60:TIMP=.65]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 892.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0002:C00178------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:W_CLAR_ALL   119.40    7.746 No_date   28:06   31.34  n/a     .000
                    +     1.0 02:W_CLAR_MJj      .00     .000 No_date    0:00     .00  n/a     .000
                 SUM=     1.0 01:W_CLAR       119.40    7.746 No_date   28:06   31.34  n/a     .000
R0002:C00179------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:W_CLAR       119.40    7.746 No_date   28:06   31.34  n/a     .000
      fname :W_CLAR.0002
      remark:Total Flows to West Clarke
#**************************************************************************
#    West Clarke Pond 2
#    - Rating curve obtained from Barrhaven South MSS modeling
#    - Tributary Drainage Area to MSS Pond 2 = 241 ha
#**************************************************************************
R0002:C00180------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:W_CLAR       119.40    7.746 No_date   28:06   31.34  n/a     .000
                out <=    1.0 01:MS_P2        119.40     .816 No_date   29:25   31.34  n/a     .000
           overflow <=    1.0 03:P2-OVF          .00     .000 No_date    0:00     .00  n/a     .000
      {MxStoUsed=.2096E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
#**************************************************************************
R0002:C00181------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N_CE       54118.36   49.006 No_date   34:39   12.96  n/a     .000
                    +     1.0 02:S-1-D4         3.28     .322 No_date   28:00   32.20  n/a     .000
                    +     1.0 02:S-1-D5        12.84    1.124 No_date   28:02   32.20  n/a     .000
                    +     1.0 02:MS_P2        119.40     .816 No_date   29:25   31.34  n/a     .000
                    +     1.0 02:P2-OVF          .00     .000 No_date    0:00     .00  n/a     .000
                 SUM=     1.0 01:SN_CE      54253.88   49.530 No_date   34:38   13.00  n/a     .000
R0002:C00182------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_CE      54253.88   49.530 No_date   34:38   13.00  n/a     .000
      fname :SN_CE.0002
      remark:Total Flows before Station 5737 on Jock River
# Channel X-Section obtained from RVCA Hydraulic Model - Station 5737
# 2021-02-25 add station 5737 before station 5002. Station 5737 was extracted from the HEC-RAS model T:\PROJ\1474-16\Des
# JFSA 2021-03-02  change the slope to 0.0175% instead of 0.02593 to stabilize the model
R0002:C00183------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_CE      54253.88   49.530 No_date   34:38   13.00  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:5737       54253.88   48.266 No_date   37:41   13.00  n/a     .000
      [L/S/n=  270./ .018/.035]
      {Vmax=  .610:Dmax= 3.450}
R0002:C00184------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:5737       54253.88   48.266 No_date   37:41   13.00  n/a     .000
                    +     1.0 02:S-1-D1        21.67    1.802 No_date   28:02   32.20  n/a     .000
                    +     1.0 02:S-1-D6         1.75     .176 No_date   28:00   32.20  n/a     .000
                    +     1.0 02:S-1-D7         2.03     .204 No_date   28:00   32.20  n/a     .000
                 SUM=     1.0 01:5002       54279.33   48.297 No_date   37:41   13.01  n/a     .000
R0002:C00185------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:5002       54279.33   48.297 No_date   37:41   13.01  n/a     .000
      fname :5002.0002
      remark:Total Flows before Station 5002 on Jock River
# Hydrograph from Node Cedarview Road routed to Node at West Clarke Drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 5002
# JFSA 2021-02-19 Change the slope from 0.01 % (as per Stantec Report 2007) to 0.0255 % so the model will be more stable
# JFSA 2021-02-19 Change to three ROUTE CHANNEL with length 275 m each instead of one with 825 m length so the model wil
# JFSA 2021-02-26 change the length of 5002 route channel from 825 m to 736 m. That is because of adding station 5737 be
R0002:C00186------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:5002       54279.33   48.297 No_date   37:41   13.01  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N_WCa      54279.33   48.300 No_date   37:38   13.01  n/a     .000
      [L/S/n=  245./ .095/.035]
      {Vmax=  .958:Dmax= 2.005}
R0002:C00187------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:N_WCa      54279.33   48.300 No_date   37:38   13.01  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N_WCb      54279.33   48.303 No_date   37:37   13.01  n/a     .000
      [L/S/n=  245./ .095/.035]
      {Vmax=  .958:Dmax= 2.005}
R0002:C00188------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:N_WCb      54279.33   48.303 No_date   37:37   13.01  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N_WC       54279.33   48.466 No_date   39:38   13.01  n/a     .000
      [L/S/n=  245./ .095/.035]
      {Vmax=  .958:Dmax= 2.005}
#**************************************************************************
# Hydrograph from Node West Clarke routed to Node at Kennedy - Burnett Drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 4534
#
R0002:C00189------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:N_WC       54279.33   48.466 No_date   39:38   13.01  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N_KB       54279.33   48.418 No_date   39:39   13.01  n/a     .000
      [L/S/n= 1020./ .050/.035]
      {Vmax=  .847:Dmax= 2.418}
#**************************************************************************
#    Catchment KEN_BU
#    - To Kennedy-Burnett SWM Facility
#    - Outlets to Fraser-Clarke drain (north of the Jock)
#    - Medium density residential subdivision
#**************************************************************************
#**************************************************************************
#   Existing Kennedy-Burnett SWM Facility
#    - Rating curve obtained from URTKBP
#    - Tributary Drainage Area to Pond = 160 ha
#**************************************************************************
R0002:C00190------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-01A        40.82    1.627 No_date   28:18   14.35 .315     .000
      [XIMP=.10:TIMP=.40]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI= .50:LGI= 522.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00191------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-01A        40.82    1.627 No_date   28:18   14.35  n/a     .000
     Major System   /     1.0 02:KB-01A-MJ       .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-01A-MN     40.82    1.627 No_date   28:18   14.35  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00192------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-01A-MJ       .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:KB-01A-MN     40.82    1.627 No_date   28:18   14.35  n/a     .000
                 SUM=     1.0 01:KB-01A-S      40.82    1.627 No_date   28:18   14.35  n/a     .000
R0002:C00193------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-01B        31.10    1.062 No_date   28:08   16.28 .358     .000
      [XIMP=.19:TIMP=.38]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .42:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI= .42:LGI= 455.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00194------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-01B        31.10    1.062 No_date   28:08   16.28  n/a     .000
     Major System   /     1.0 02:KB-01B-MJ       .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-01B-MN     31.10    1.062 No_date   28:08   16.28  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00195------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-01B-MJ       .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:KB-01B-MN     31.10    1.062 No_date   28:08   16.28  n/a     .000
                 SUM=     1.0 01:KB-01B-S      31.10    1.062 No_date   28:08   16.28  n/a     .000
R0002:C00196------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-01C        13.78     .776 No_date   28:06   17.09 .375     .000
      [XIMP=.20:TIMP=.41]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI= .50:LGI= 303.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00197------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-01C        13.78     .776 No_date   28:06   17.09  n/a     .000
     Major System   /     1.0 02:KB-01C-MJ       .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-01C-MN     13.78     .776 No_date   28:06   17.09  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00198------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-01C-MJ       .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:KB-01C-MN     13.78     .776 No_date   28:06   17.09  n/a     .000
                 SUM=     1.0 01:KB-01C-S      13.78     .776 No_date   28:06   17.09  n/a     .000
R0002:C00199------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-03         84.78    3.788 No_date   28:12   16.73 .368     .000
      [XIMP=.20:TIMP=.39]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI= .63:LGI= 752.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00200------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-03         84.78    3.788 No_date   28:12   16.73  n/a     .000
     Major System   /     1.0 02:KB-03-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-03-MN      84.78    3.788 No_date   28:12   16.73  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00201------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-03-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:KB-03-MN      84.78    3.788 No_date   28:12   16.73  n/a     .000
                 SUM=     1.0 01:KB-03-S       84.78    3.788 No_date   28:12   16.73  n/a     .000
R0002:C00202------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-04          6.95     .792 No_date   28:01   38.80 .853     .000
      [XIMP=.85:TIMP=.85]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .94:SLPI= .50:LGI= 215.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00203------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-04          6.95     .792 No_date   28:01   38.80  n/a     .000
     Major System   /     1.0 02:KB-04-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-04-MN       6.95     .503 No_date   27:53   39.02  n/a     .000
      {MjSysSto=.1541E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00204------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-04-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:KB-04-MN       6.95     .503 No_date   27:53   39.02  n/a     .000
                 SUM=     1.0 01:KB-04-S        6.95     .503 No_date   27:53   39.02  n/a     .000
R0002:C00205------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-05          5.19     .653 No_date   28:01   41.29 .907     .000
      [XIMP=.93:TIMP=.93]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 186.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00206------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-06         12.93    1.683 No_date   28:00   39.68 .872     .000
      [XIMP=.87:TIMP=.87]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .94:SLPI=4.75:LGI= 294.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00207------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-06         12.93    1.683 No_date   28:00   39.68  n/a     .000
     Major System   /     1.0 02:KB-06-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-06-MN      12.93    1.683 No_date   28:00   39.68  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00208------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-06-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:KB-06-MN      12.93    1.683 No_date   28:00   39.68  n/a     .000
                 SUM=     1.0 01:KB-06-S       12.93    1.683 No_date   28:00   39.68  n/a     .000
```

```
R0002:C00209-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-11          4.03     .425 No_date   28:00   32.17 .707     .000
      [XIMP=.68:TIMP=.68]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI=2.00:LGI= 164.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00210-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-11          4.03     .425 No_date   28:00   32.17  n/a     .000
     Major System   /     1.0 02:KB-11-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-11-MN       4.03     .425 No_date   28:00   32.17  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00211-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-11-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:KB-11-MN       4.03     .425 No_date   28:00   32.17  n/a     .000
                 SUM=     1.0 01:KB-11-S        4.03     .425 No_date   28:00   32.17  n/a     .000
R0002:C00212-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S1             4.99     .689 No_date   28:00   41.29 .907     .000
      [XIMP=.93:TIMP=.93]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=2.00:LGI= 182.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00213-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-15          2.15     .241 No_date   28:00   37.11 .815     .000
      [XIMP=.79:TIMP=.79]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .16:SLPI= .30:LGI= 120.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00214-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-01A-S      40.82    1.627 No_date   28:18   14.35  n/a     .000
                    +     1.0 02:KB-01B-S      31.10    1.062 No_date   28:08   16.28  n/a     .000
                    +     1.0 02:KB-01C-S      13.78     .776 No_date   28:06   17.09  n/a     .000
                    +     1.0 02:KB-03-S       84.78    3.788 No_date   28:12   16.73  n/a     .000
                    +     1.0 02:KB-04-S        6.95     .503 No_date   27:53   39.02  n/a     .000
                    +     1.0 02:KB-05          5.19     .653 No_date   28:01   41.29  n/a     .000
                    +     1.0 02:KB-06-S       12.93    1.683 No_date   28:00   39.68  n/a     .000
                    +     1.0 02:KB-11-S        4.03     .425 No_date   28:00   32.17  n/a     .000
                    +     1.0 02:KB-15          2.15     .241 No_date   28:00   37.11  n/a     .000
                    +     1.0 02:S1             4.99     .689 No_date   28:00   41.29  n/a     .000
                 SUM=     1.0 01:KB-P1        206.72    9.491 No_date   28:02   20.13  n/a     .000
R0002:C00215-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:KB-P1        206.72    9.491 No_date   28:02   20.13  n/a     .000
                out <=    1.0 01:KB-P1R       206.72    8.405 No_date   28:13   20.13  n/a     .000
           overflow <=    1.0 03:KB-P1ovf        .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.3779E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00216-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-P1R       206.72    8.405 No_date   28:13   20.13  n/a     .000
                    +     1.0 02:KB-P1ovf        .00     .000 No_date    0:00     .00  n/a     .000
                 SUM=     1.0 01:KB-Pond1     206.72    8.405 No_date   28:13   20.13  n/a     .000
R0002:C00217-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:KB-Pond1     206.72    8.405 No_date   28:13   20.13  n/a     .000
      fname :KB-Pond1.0002
      remark:Total Flows at KB first pond
R0002:C00218-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-07         10.86    1.337 No_date   28:00   39.32 .864     .000
      [XIMP=.86:TIMP=.86]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI=2.00:LGI= 269.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00219-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-07         10.86    1.337 No_date   28:00   39.32  n/a     .000
     Major System   /     1.0 02:KB-07-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-07-MN      10.86    1.337 No_date   28:00   39.32  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00220-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-07-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:KB-07-MN      10.86    1.337 No_date   28:00   39.32  n/a     .000
                 SUM=     1.0 01:KB-07-S       10.86    1.337 No_date   28:00   39.32  n/a     .000
R0002:C00221-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-08          6.61     .651 No_date   28:00   30.82 .677     .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI=2.00:LGI= 210.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00222-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-08          6.61     .651 No_date   28:00   30.82  n/a     .000
     Major System   /     1.0 02:KB-08-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-08-MN       6.61     .651 No_date   28:00   30.82  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00223-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-08-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:KB-08-MN       6.61     .651 No_date   28:00   30.82  n/a     .000
                 SUM=     1.0 01:KB-08-S        6.61     .651 No_date   28:00   30.82  n/a     .000
R0002:C00224-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-09          2.60     .344 No_date   28:00   38.64 .849     .000
      [XIMP=.86:TIMP=.86]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=2.00:LGI= 132.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00225-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-10_1        2.37     .314 No_date   28:00   38.64 .849     .000
      [XIMP=.86:TIMP=.86]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=2.00:LGI= 126.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00226-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-10_2        1.14     .153 No_date   28:00   38.64 .849     .000
      [XIMP=.86:TIMP=.86]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=2.00:LGI=  87.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00227-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-12          4.86     .581 No_date   28:00   36.37 .799     .000
      [XIMP=.79:TIMP=.79]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.10:SLPI=2.00:LGI= 180.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00228-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-12          4.86     .581 No_date   28:00   36.37  n/a     .000
     Major System   /     1.0 02:KB-12-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-12-MN       4.86     .581 No_date   28:00   36.37  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00229-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-12-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:KB-12-MN       4.86     .581 No_date   28:00   36.37  n/a     .000
                 SUM=     1.0 01:KB-12-S        4.86     .581 No_date   28:00   36.37  n/a     .000
R0002:C00230-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-13         10.19     .970 No_date   28:00   30.82 .677     .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI=2.00:LGI= 261.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00231-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-13         10.19     .970 No_date   28:00   30.82  n/a     .000
     Major System   /     1.0 02:KB-13-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-13-MN      10.19     .970 No_date   28:00   30.82  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00232-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-13-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:KB-13-MN      10.19     .970 No_date   28:00   30.82  n/a     .000
                 SUM=     1.0 01:KB-13-S       10.19     .970 No_date   28:00   30.82  n/a     .000
R0002:C00233-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-14          5.47     .543 No_date   28:00   30.82 .677     .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI=2.00:LGI= 191.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00234-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-14          5.47     .543 No_date   28:00   30.82  n/a     .000
     Major System   /     1.0 02:KB-14-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-14-MN       5.47     .543 No_date   28:00   30.82  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00235-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-14-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:KB-14-MN       5.47     .543 No_date   28:00   30.82  n/a     .000
                 SUM=     1.0 01:KB-14-S        5.47     .543 No_date   28:00   30.82  n/a     .000
R0002:C00236-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-16_2        3.42     .337 No_date   28:01   33.97 .746     .000
      [XIMP=.71:TIMP=.71]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .16:SLPI= .30:LGI= 151.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00237-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-Pond1     206.72    8.405 No_date   28:13   20.13  n/a     .000
                    +     1.0 02:KB-07-S       10.86    1.337 No_date   28:00   39.32  n/a     .000
                    +     1.0 02:KB-08-S        6.61     .651 No_date   28:00   30.82  n/a     .000
                    +     1.0 02:KB-09          2.60     .344 No_date   28:00   38.64  n/a     .000
                    +     1.0 02:KB-10_1        2.37     .314 No_date   28:00   38.64  n/a     .000
                    +     1.0 02:KB-10_2        1.14     .153 No_date   28:00   38.64  n/a     .000
                    +     1.0 02:KB-12-S        4.86     .581 No_date   28:00   36.37  n/a     .000
                    +     1.0 02:KB-13-S       10.19     .970 No_date   28:00   30.82  n/a     .000
                    +     1.0 02:KB-14-S        5.47     .543 No_date   28:00   30.82  n/a     .000
                    +     1.0 02:KB-16_2        3.42     .337 No_date   28:01   33.97  n/a     .000
                 SUM=     1.0 01:KB-P2        254.24   11.772 No_date   28:02   22.82  n/a     .000
R0002:C00238-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:KB-P2        254.24   11.772 No_date   28:02   22.82  n/a     .000
                out <=    1.0 01:KB-P2R       254.24    9.930 No_date   28:12   22.82  n/a     .000
           overflow <=    1.0 03:KB-P2ovf        .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.4507E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00239-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-P2R       254.24    9.930 No_date   28:12   22.82  n/a     .000
                    +     1.0 02:KB-P2ovf        .00     .000 No_date    0:00     .00  n/a     .000
                 SUM=     1.0 01:KB-Pond2     254.24    9.930 No_date   28:12   22.82  n/a     .000
R0002:C00240-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:KB-Pond2     254.24    9.930 No_date   28:12   22.82  n/a     .000
      fname :KB-Pond2.0002
      remark:Total Flows at KB second pond
R0002:C00241-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-16_1        2.80     .293 No_date   28:01   35.54 .781     .000
      [XIMP=.75:TIMP=.75]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .16:SLPI= .30:LGI= 137.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00242-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-Pond2     254.24    9.930 No_date   28:12   22.82  n/a     .000
                    +     1.0 02:KB-16_1        2.80     .293 No_date   28:01   35.54  n/a     .000
                 SUM=     1.0 01:KB-P3        257.04   10.049 No_date   28:11   22.96  n/a     .000
R0002:C00243-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:KB-P3        257.04   10.049 No_date   28:11   22.96  n/a     .000
                out <=    1.0 01:KB-P3R        18.54     .051 No_date   18:09   22.96  n/a     .000
           overflow <=    1.0 03:KB-P3ovf     238.50    9.997 No_date   28:11   22.96  n/a     .000
     {MxStoUsed=.2001E-02  m3, TotOvfVol=.5477E+01  m3, N-Ovf=    1, TotDurOvf=   22.hrs}
R0002:C00244-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-P3R        18.54     .051 No_date   18:09   22.96  n/a     .000
                    +     1.0 02:KB-P3ovf     238.50    9.997 No_date   28:11   22.96  n/a     .000
                 SUM=     1.0 01:KB-Pond3     257.04   10.048 No_date   28:11   22.96  n/a     .000
R0002:C00245-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:KB-Pond3     257.04   10.048 No_date   28:11   22.96  n/a     .000
      fname :KB-Pond3.0002
      remark:Total Flows at KB third pond
#*****************************************************************************
#    EXISTING / PROPOSED Subcatchments (Kennedy-Burnett SWM Facility (118080), SWM Modeling Approach, NOVATECH Report Ju
#    - TO FRASER-CLARKE DRAIN
#*****************************************************************************
R0002:C00246-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:FC-01          8.03     .575 No_date   28:01   23.89 .525     .000
      [XIMP=.47:TIMP=.47]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 231.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00247-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:FC-01          8.03     .575 No_date   28:01   23.89  n/a     .000
     Major System   /     1.0 02:FC-01-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:FC-01-MN       8.03     .575 No_date   28:01   23.89  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00248-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:FC-01-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:FC-01-MN       8.03     .575 No_date   28:01   23.89  n/a     .000
                 SUM=     1.0 01:FC-01-S        8.03     .575 No_date   28:01   23.89  n/a     .000
R0002:C00249-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:FC-02         16.05    1.936 No_date   28:01   41.29 .907     .000
      [XIMP=.93:TIMP=.93]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 327.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00250-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:FC-02         16.05    1.936 No_date   28:01   41.29  n/a     .000
     Major System   /     1.0 02:FC-02-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:FC-02-MN      16.05    1.159 No_date   27:52   41.31  n/a     .000
      {MjSysSto=.4641E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00251-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:FC-02-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:FC-02-MN      16.05    1.159 No_date   27:52   41.31  n/a     .000
                 SUM=     1.0 01:FC-02-S       16.05    1.159 No_date   27:52   41.31  n/a     .000
R0002:C00252-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:FC-03          7.37     .687 No_date   28:01   30.32 .666     .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 222.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00253-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:FC-03          7.37     .687 No_date   28:01   30.32  n/a     .000
     Major System   /     1.0 02:FC-03-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:FC-03-MN       7.37     .358 No_date   27:49   30.49  n/a     .000
      {MjSysSto=.2043E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00254-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:FC-03-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:FC-03-MN       7.37     .358 No_date   27:49   30.49  n/a     .000
                 SUM=     1.0 01:FC-03-S        7.37     .358 No_date   27:49   30.49  n/a     .000
R0002:C00255-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:FC-04         12.87    1.148 No_date   28:01   30.32 .666     .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 293.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00256-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:FC-04         12.87    1.148 No_date   28:01   30.32  n/a     .000
     Major System   /     1.0 02:FC-04-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:FC-04-MN      12.87     .741 No_date   27:53   30.44  n/a     .000
      {MjSysSto=.2134E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00257-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:FC-04-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:FC-04-MN      12.87     .741 No_date   27:53   30.44  n/a     .000
                 SUM=     1.0 01:FC-04-S       12.87     .741 No_date   27:53   30.44  n/a     .000
#*****************************************************************************
#    PROPOSED Subcatchments (Kennedy-Burnett SWM Facility (118080), SWM Modeling Approach, NOVATECH Report June, 2020)
#    - TO JOCK RIVER
#*****************************************************************************
R0002:C00258-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:JR-01          8.24     .764 No_date   28:01   30.32 .666     .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 234.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00259-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:JR-01          8.24     .764 No_date   28:01   30.32  n/a     .000
     Major System   /     1.0 02:JR-01-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:JR-01-MN       8.24     .563 No_date   28:13   30.43  n/a     .000
      {MjSysSto=.8257E+02, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00260-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:JR-01-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:JR-01-MN       8.24     .563 No_date   27:55   30.43  n/a     .000
                 SUM=     1.0 01:JR-01-S        8.24     .563 No_date   27:55   30.43  n/a     .000
R0002:C00261-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:JR-02          1.59     .162 No_date   28:00   30.32 .666     .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 103.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00262-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:JR-02          1.59     .162 No_date   28:00   30.32  n/a     .000
     Major System   /     1.0 02:JR-02-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:JR-02-MN       1.59     .153 No_date   27:58   30.45  n/a     .000
      {MjSysSto=.1236E+01, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00263-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:JR-02-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:JR-02-MN       1.59     .153 No_date   27:58   30.45  n/a     .000
                 SUM=     1.0 01:JR-02-S        1.59     .153 No_date   27:58   30.45  n/a     .000
#*****************************************************************************
#    Catchment FRASER
#    - To Fraser-Clarke drain (north of the Jock)
#    - Developed land with assumed 43% imp.
#    - 2020-12-17 Change Fraser area to be 35.1 as measured from QGIS
#    - 2020-12-17 All Fraser is undeveloped (Nashyd)
#*****************************************************************************
R0002:C00264-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:FRASER-DRN    13.65     .212 No_date   28:22   14.83 .326     .000
      [CN= 77.0: N= 3.00: Tp=  .43]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0002:C00265-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:FRASER-D      21.61    1.710 No_date   28:02   30.87 .678     .000
      [XIMP=.58:TIMP=.58]
      [LOSS= 2 :CN= 80.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 380.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 26.32: SMAX=175.50: SK= .010]
R0002:C00266-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:FRASER-D      21.61    1.710 No_date   28:02   30.87  n/a     .000
     Major System   /     1.0 02:FRASER-J        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:FRASER-N      21.61    1.710 No_date   28:02   30.87  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00267-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:FRASER-J        .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:FRASER-N      21.61    1.710 No_date   28:02   30.87  n/a     .000
                 SUM=     1.0 01:FRASER-S      21.61    1.710 No_date   28:02   30.87  n/a     .000
R0002:C00268-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-Pond3     257.04   10.048 No_date   28:11   22.96  n/a     .000
                    +     1.0 02:S-1-B         55.36     .825 No_date   28:24   14.83  n/a     .000
                    +     1.0 02:FRASER-DRN    13.65     .212 No_date   28:22   14.83  n/a     .000
                    +     1.0 02:FRASER-S      21.61    1.710 No_date   28:02   30.87  n/a     .000
                    +     1.0 02:N_KB       54279.33   48.418 No_date   39:39   13.01  n/a     .000
                    +     1.0 02:FC-01-S        8.03     .575 No_date   28:01   23.89  n/a     .000
                    +     1.0 02:FC-02-S       16.05    1.159 No_date   27:52   41.31  n/a     .000
                    +     1.0 02:FC-03-S        7.37     .358 No_date   27:49   30.49  n/a     .000
                 SUM=     1.0 01:4241       54658.44   48.702 No_date   39:39   13.08  n/a     .000
R0002:C00269-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:4241       54658.44   48.702 No_date   39:39   13.08  n/a     .000
      fname :4241.0002
      remark:Total Flows at Ken-Burnett Outlet
# Hydrograph from Node Ken-Burnett to station 3633
# Channel X-Section obtained from RVCA Hydraulic Model - Station 4241
#
R0002:C00270-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:4241       54658.44   48.702 No_date   39:39   13.08  n/a     .000
     [RDT= 1.00] out<-    1.0 01:4241-out   54658.44   48.528 No_date   39:29   13.08  n/a     .000
      [L/S/n=  294./ .109/.035]
      {Vmax=  .960:Dmax= 1.541}
R0002:C00271-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:4241-out   54658.44   48.528 No_date   39:29   13.08  n/a     .000
                    +     1.0 02:FC-04-S       12.87     .741 No_date   27:53   30.44  n/a     .000
                    +     1.0 02:JR-01-S        8.24     .563 No_date   27:55   30.43  n/a     .000
                    +     1.0 02:JR-02-S        1.59     .153 No_date   27:58   30.45  n/a     .000
                 SUM=     1.0 01:SN_KB      54681.13   48.551 No_date   39:29   13.09  n/a     .000
R0002:C00272-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
```

```
    SAVE HYD              1.0 01:SN_KB      54681.13   48.551 No_date   39:29   13.09  n/a     .000
      fname :SN_KB.0002
      remark:HYD_COMMENT=["Total Flows before Station 3633]
# Hydrograph from Station 3633 to Node Todd
# Channel X-Section obtained from RVCA Hydraulic Model - Station 3633
# JFSA 2021-02-26 change the channel length (at station 3633) from 650m to 608m and change the slope from 0.0498% to 0.2
#
R0002:C00273------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_KB      54681.13   48.551 No_date   39:29   13.09  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N_TO       54681.13   48.522 No_date   37:57   13.09  n/a     .000
      [L/S/n=  608./ .247/.035]
      {Vmax= 1.295:Dmax= 1.131}
#*****************************************************************************
#    Catchment Greenbank
#    - To Greenbank Drain (south of the Jock)
#    - JFSA 2021-01-18 add Greenbank pond as per JFSA, P598(06)-15, June 2016
#    - JFSA 2021-01-19 update area from 37.479 ha to 36.6 ha based on GIS measurements
#*****************************************************************************
R0002:C00274------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:Greenbank     36.60    2.954 No_date   28:02   32.54 .715     .000
      [XIMP=.64:TIMP=.68]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 494.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0002:C00275------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:Greenbank     36.60    2.954 No_date   28:02   32.54  n/a     .000
                out <=    1.0 01:GreenB_MN     36.60     .569 No_date   28:38   32.54  n/a     .000
           overflow <=    1.0 03:GreenB_MJ       .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.6052E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00276------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N_TO       54681.13   48.522 No_date   37:57   13.09  n/a     .000
                    +     1.0 02:GreenB_MJ       .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:GreenB_MN     36.60     .569 No_date   28:38   32.54  n/a     .000
                  SUM=    1.0 01:GreenB     54717.73   48.599 No_date   37:56   13.10  n/a     .000
R0002:C00277------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:GreenB     54717.73   48.599 No_date   37:56   13.10  n/a     .000
      fname :GreenB.0002
      remark:Total Flows at Greenbank Drain
#*****************************************************************************
#    Catchment TODD
#    - To Todd Drain (south of the Jock)
#    - Subdivision with 43% imp. as per Barrhaven South MSS
#    - 2020-11-30 increase imp. based on P598(04)-11
#    - 2020-11-30 update TODD Tributary Drainage Area to  = 146.015 ha based on P598(04)-11
#    - 2020-11-30 split TODD Drainage Area to MAJOR, MINOR, POND and ALL
#*****************************************************************************
#    - JFSA 2021-01-19 add "TODD_MN1" as part of Clarke("W_CLAR_MJ") and remove it from Todd
R0002:C00278------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:TODD_MN2       2.10     .179 No_date   28:00   28.91 .635     .000
      [XIMP=.53:TIMP=.57]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 118.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0002:C00279------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:TODD_MN3        .12     .011 No_date   28:00   28.91 .635     .000
      [XIMP=.53:TIMP=.57]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI=  28.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0002:C00280------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:TODD_MJ       30.23    2.154 No_date   28:03   29.64 .651     .000
      [XIMP=.52:TIMP=.64]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 449.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0002:C00281------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:TODD_ALL     112.91    6.553 No_date   28:06   28.70 .631     .000
      [XIMP=.52:TIMP=.57]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 868.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0002:C00282------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:TODD_P         3.06     .295 No_date   28:00   31.76 .698     .000
      [XIMP=.63:TIMP=.63]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 143.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
# 5-Year + 12% Capture
R0002:C00283------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:TODD_MJ       30.23    2.154 No_date   28:03   29.64  n/a     .000
 *              out <=    1.0 01:TODD_MJn      30.23    2.154 No_date   28:03   29.64  n/a     .000
           overflow <=    1.0 03:TODD_MJj        .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.6551E-04  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
# 5-Year + 12% Capture
R0002:C00284------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:TODD_MN2       2.10     .179 No_date   28:00   28.91  n/a     .000
                out <=    1.0 01:TODD_MN2n      2.10     .179 No_date   28:00   28.91  n/a     .000
           overflow <=    1.0 03:TODD_MN2j       .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.6761E-04  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00285------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:TODD_MN3        .12     .011 No_date   28:00   28.91  n/a     .000
                out <=    1.0 01:TODD_MN3n       .12     .010 No_date   28:00   28.91  n/a     .000
           overflow <=    1.0 03:TODD_MN3j       .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.6566E-04  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00286------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A2            25.50    1.427 No_date   28:04   25.60 .563     .000
      [XIMP=.42:TIMP=.52]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 566.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0002:C00287------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A2            25.50    1.427 No_date   28:04   25.60  n/a     .000
     Major System   /     1.0 02:A2-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A2-MN         25.50    1.427 No_date   28:04   25.60  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00288------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:TODD_MN2n      2.10     .179 No_date   28:00   28.91  n/a     .000
                    +     1.0 02:TODD_MN3n       .12     .010 No_date   28:00   28.91  n/a     .000
                    +     1.0 02:TODD_MJj        .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:TODD_P         3.06     .295 No_date   28:00   31.77  n/a     .000
                    +     1.0 02:TODD_ALL     112.91    6.553 No_date   28:06   28.70  n/a     .000
                    +     1.0 02:W_CLAR_MJn     1.77     .141 No_date   28:00   27.78  n/a     .000
                  SUM=    1.0 01:TODD         119.95    6.882 No_date   28:05   28.77  n/a     .000
R0002:C00289------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:TODD         119.95    6.882 No_date   28:05   28.77  n/a     .000
      fname :TODD.0002
      remark:Total Flows at Todd Drain
#*****************************************************************************
#    Todd Pond 3
#    - Rating curve obtained from Barrhaven South MSS modeling
#    - stantec 2007, Tributary Drainage Area to MSS Pond 3 = 193 ha
#*****************************************************************************
R0002:C00290------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:TODD         119.95    6.882 No_date   28:05   28.77  n/a     .000
                out <=    1.0 01:MS_P3        119.95    1.033 No_date   29:08   28.76  n/a     .000
           overflow <=    1.0 03:P3-OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.2183E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00291------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:GreenB     54717.73   48.599 No_date   37:56   13.10  n/a     .000
                    +     1.0 02:MS_P3        119.95    1.033 No_date   29:08   28.76  n/a     .000
                    +     1.0 02:P3-OVF          .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:TODD_MN2j       .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:A2-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                  SUM=    1.0 01:SN_TO      54837.69   48.739 No_date   37:56   13.13  n/a     .000
R0002:C00292------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_TO      54837.69   48.739 No_date   37:56   13.13  n/a     .000
      fname :SN_TO.0002
      remark:Total Flows at Todd Drain
#
# Hydrograph from Todd Drain routed to Corrigan Drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 2462
# 2021-02-19 Change the slope from 0.033 % (as per Stantec Report 2007) to 0.05 % so the model will be more stable and g
R0002:C00293------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_TO      54837.69   48.739 No_date   37:56   13.13  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:N_TO       54837.69   48.720 No_date   38:09   13.13  n/a     .000
      [L/S/n=  280./ .050/.045]
      {Vmax=  .727:Dmax= 2.123}
R0002:C00294------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:N_TO       54837.69   48.720 No_date   38:09   13.13  n/a     .000
      fname :N_TO.0002
      remark:Total inflows at Station 2462
#*****************************************************************************
#    Catchment CORRIG
#    - To Corrigan Drain (south of the Jock)
#    - Primarily Developed (medium density)
#    - JFSA JAN 2021, add Corrigan subcatchments as per IBI, July 2008
#*****************************************************************************
R0002:C00295------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:corr1         15.87    1.352 No_date   28:02   31.77 .698     .000
      [XIMP=.63:TIMP=.63]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 325.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0002:C00296------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:corr1         15.87    1.352 No_date   28:02   31.77  n/a     .000
     Major System   /     1.0 02:corr1-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:corr1-MN      15.87    1.352 No_date   28:02   31.77  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00297------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:corr2         12.47     .100 No_date   29:12   14.83 .326     .000
      [CN= 77.0: N= 3.00: Tp= 1.10]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0002:C00298------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A1-Corrig     15.75     .982 No_date   28:02   25.60 .563     .000
      [XIMP=.42:TIMP=.52]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 324.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0002:C00299------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A1-Corrig     15.75     .982 No_date   28:02   25.60  n/a     .000
     Major System   /     1.0 02:A1-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A1-MN         15.75     .982 No_date   28:02   25.60  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00300------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:B1             2.77     .033 No_date   28:09    9.64 .212     .000
      [CN= 56.0: N= 3.00: Tp=  .23]
      [IaREC= 4.00: SMIN= 79.69: SMAX=531.24: SK= .010]
      [InterEventTime=  12.00]
R0002:C00301------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A4             1.27     .116 No_date   28:01   32.20 .707     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 253.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0002:C00302------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A4             1.27     .116 No_date   28:01   32.20  n/a     .000
     Major System   /     1.0 02:A4-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A4-MN          1.27     .116 No_date   28:01   32.20  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00303------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:A1-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:A1-MN         15.75     .982 No_date   28:02   25.60  n/a     .000
                    +     1.0 02:corr1-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:corr1-MN      15.87    1.352 No_date   28:02   31.77  n/a     .000
                    +     1.0 02:corr2         12.47     .100 No_date   29:12   14.83  n/a     .000
                    +     1.0 02:B1             2.77     .033 No_date   28:09    9.64  n/a     .000
                    +     1.0 02:A4-MN          1.27     .116 No_date   28:01   32.20  n/a     .000
                  SUM=    1.0 01:MH101         48.13    2.497 No_date   28:02   24.10  n/a     .000
R0002:C00304------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH101         48.13    2.497 No_date   28:02   24.10  n/a     .000
      fname :MH101.0002
      remark:Total Flows at MH101
R0002:C00305------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH101         48.13    2.497 No_date   28:02   24.10  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:101-102       48.13    2.412 No_date   28:03   24.10  n/a     .000
      [L/S/n=  368./ .540/.013]
      {Vmax= 2.789:Dmax=  .935}
      [Din= 1.05:Dused= 1.14]
R0002:C00306------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:A2-MN         25.50    1.427 No_date   28:04   25.60  n/a     .000
                    +     1.0 02:101-102       48.13    2.412 No_date   28:03   24.10  n/a     .000
                  SUM=    1.0 01:MH102         73.63    3.837 No_date   28:03   24.62  n/a     .000
R0002:C00307------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH102         73.63    3.837 No_date   28:03   24.62  n/a     .000
      fname :MH102.0002
      remark:Total Flows at MH102
R0002:C00308------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A5             1.60     .155 No_date   28:01   34.21 .752     .000
      [XIMP=.71:TIMP=.71]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 300.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0002:C00309------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:A4-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:A5             1.60     .155 No_date   28:01   34.21  n/a     .000
                  SUM=    1.0 01:A5T            1.60     .155 No_date   28:01   34.21  n/a     .000
R0002:C00310------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A5T            1.60     .155 No_date   28:01   34.21  n/a     .000
     Major System   /     1.0 02:A5-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A5-MN          1.60     .155 No_date   28:01   34.21  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00311------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH102         73.63    3.837 No_date   28:03   24.62  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:102-103       73.63    3.600 No_date   28:05   24.62  n/a     .000
      [L/S/n=  504./ .280/.013]
      {Vmax= 2.428:Dmax= 1.243}
      [Din= 1.50:Dused= 1.51]
R0002:C00312------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:102-103       73.63    3.600 No_date   28:05   24.62  n/a     .000
                    +     1.0 02:A5-MN          1.60     .155 No_date   28:01   34.21  n/a     .000
                  SUM=    1.0 01:MH103         75.23    3.728 No_date   28:05   24.82  n/a     .000
R0002:C00313------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH103         75.23    3.728 No_date   28:05   24.82  n/a     .000
      fname :MH103.0002
      remark:Total Flows at MH103
R0002:C00314------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH103         75.23    3.728 No_date   28:05   24.82  n/a     .000
     [RDT= 1.00] out<-    1.0 01:103-104       75.23    3.629 No_date   28:07   24.82  n/a     .000
      [L/S/n=  438./ .460/.013]
      {Vmax= 3.024:Dmax=  .924}
      [Din= 1.65:Dused= 1.65]
R0002:C00315------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A6             1.56     .152 No_date   28:01   34.21 .752     .000
      [XIMP=.71:TIMP=.71]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 280.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0002:C00316------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:A5-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:A6             1.56     .152 No_date   28:01   34.21  n/a     .000
                  SUM=    1.0 01:A6T            1.56     .152 No_date   28:01   34.21  n/a     .000
R0002:C00317------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A6T            1.56     .152 No_date   28:01   34.21  n/a     .000
     Major System   /     1.0 02:A6-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A6-MN          1.56     .152 No_date   28:01   34.21  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00318------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:A6-MN          1.56     .152 No_date   28:01   34.21  n/a     .000
                    +     1.0 02:103-104       75.23    3.629 No_date   28:07   24.82  n/a     .000
                    +     1.0 02:TODD_MJn      30.23    2.154 No_date   28:03   29.64  n/a     .000
                  SUM=    1.0 01:MH104        107.02    5.765 No_date   28:05   26.32  n/a     .000
R0002:C00319------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH104        107.02    5.765 No_date   28:05   26.32  n/a     .000
      fname :MH104.0002
      remark:Total Flows at MH104
R0002:C00320------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:B2            12.31     .731 No_date   28:03   25.66 .564     .000
      [XIMP=.41:TIMP=.54]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 417.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0002:C00321------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:B2            12.31     .731 No_date   28:03   25.66  n/a     .000
     Major System   /     1.0 02:B2-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:B2-MN         12.31     .731 No_date   28:03   25.66  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00322------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:B2-MN         12.31     .731 No_date   28:03   25.66  n/a     .000
     [RDT= 1.00] out<-    1.0 01:315-333       12.31     .675 No_date   28:04   25.66  n/a     .000
      [L/S/n=  254./ .100/.013]
      {Vmax= 1.136:Dmax=  .665}
      [Din= 1.20:Dused= 1.20]
R0002:C00323------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:B3             5.59     .346 No_date   28:02   25.66 .564     .000
      [XIMP=.41:TIMP=.54]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 345.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0002:C00324------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:B3             5.59     .346 No_date   28:02   25.66  n/a     .000
     Major System   /     1.0 02:B3-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:B3-MN          5.59     .346 No_date   28:02   25.66  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00325------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:B3-MN          5.59     .346 No_date   28:02   25.66  n/a     .000
                    +     1.0 02:315-333       12.31     .675 No_date   28:04   25.66  n/a     .000
                  SUM=    1.0 01:MH333         17.90    1.009 No_date   28:04   25.66  n/a     .000
R0002:C00326------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH333         17.90    1.009 No_date   28:04   25.66  n/a     .000
      fname :MH333.0002
      remark:Total Flows at MH333
R0002:C00327------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH333         17.90    1.009 No_date   28:04   25.66  n/a     .000
     [RDT= 1.00] out<-    1.0 01:333-335       17.90     .937 No_date   28:05   25.66  n/a     .000
      [L/S/n=  251./ .100/.013]
      {Vmax= 1.217:Dmax=  .826}
      [Din= 1.20:Dused= 1.20]
R0002:C00328------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:333-335       17.90     .937 No_date   28:05   25.66  n/a     .000
     [RDT= 1.00] out<-    1.0 01:335-338       17.90     .888 No_date   28:07   25.66  n/a     .000
      [L/S/n=  185./ .100/.013]
      {Vmax= 1.199:Dmax=  .782}
      [Din= 1.20:Dused= 1.20]
R0002:C00329------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:335-338       17.90     .888 No_date   28:07   25.66  n/a     .000
     [RDT= 1.00] out<-    1.0 01:338-340       17.90     .838 No_date   28:08   25.66  n/a     .000
      [L/S/n=  233./ .100/.013]
      {Vmax= 1.194:Dmax=  .695}
      [Din= 1.35:Dused= 1.35]
R0002:C00330------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:B4             7.60     .459 No_date   28:02   25.66 .564     .000
      [XIMP=.41:TIMP=.54]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 388.:MNI=.013:SCI=   .0]
```

```
          [IaRECimp=   4.00: IaRECper=   4.00]
          [SMIN= 33.81: SMAX=225.43: SK= .010]
 R0002:C00331------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      COMPUTE DUALHYD        1.0 01:B4              7.60      .459 No_date   28:02   25.66  n/a      .000
       Major System   /      1.0 02:B4-MJ            .00      .000 No_date    0:00     .00  n/a      .000
       Minor System   \      1.0 03:B4-MN           7.60      .459 No_date   28:02   25.66  n/a      .000
        {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
 R0002:C00332------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      ADD HYD                1.0 02:338-340        17.90      .838 No_date   28:08   25.66  n/a      .000
                       +     1.0 02:B4-MN           7.60      .459 No_date   28:02   25.66  n/a      .000
                    SUM=     1.0 01:MH340          25.50     1.234 No_date   28:05   25.66  n/a      .000
 R0002:C00333------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      SAVE HYD               1.0 01:MH340          25.50     1.234 No_date   28:05   25.66  n/a      .000
        fname :MH340.0002
        remark:Total Flows at MH340
 R0002:C00334------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      ROUTE PIPE      ->     1.0 02:MH340          25.50     1.234 No_date   28:05   25.66  n/a      .000
       [RDT= 1.00] out<-     1.0 01:340-104        25.50     1.182 No_date   28:07   25.66  n/a      .000
        [L/S/n=  240./ .150/.013]
        {Vmax= 1.502:Dmax=  .672}
        [Din= 1.65:Dused= 1.65}
 R0002:C00335------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      ADD HYD                1.0 02:340-104        25.50     1.182 No_date   28:07   25.66  n/a      .000
                       +     1.0 02:MH104         107.02     5.765 No_date   28:05   26.32  n/a      .000
                    SUM=     1.0 01:MH104T        132.52     6.925 No_date   28:05   26.19  n/a      .000
 R0002:C00336------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      ROUTE PIPE      ->     1.0 02:MH104T        132.52     6.925 No_date   28:05   26.19  n/a      .000
       [RDT= 1.00] out<-     1.0 01:104-105       132.52     6.452 No_date   28:06   26.19  n/a      .000
        [L/S/n=  380./ .100/.013]
        {Vmax= 1.871:Dmax= 1.542}
        {HGTH= 2.10:WDTH= 2.40}
 R0002:C00337------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      CONTINUOUS STANDHYD   1.0 01:B5               2.20      .187 No_date   28:00   29.51 .648      .000
        [XIMP=.57:TIMP=.57]
        [LOSS= 2 :CN= 75.0]
        [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
        [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 187.:MNI=.013:SCI=   .0]
        [IaRECimp=   4.00: IaRECper=   4.00]
        [SMIN= 33.81: SMAX=225.43: SK= .010]
 R0002:C00338------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      COMPUTE DUALHYD        1.0 01:B5              2.20      .187 No_date   28:00   29.51  n/a      .000
       Major System   /      1.0 02:B5-MJ            .00      .000 No_date    0:00     .00  n/a      .000
       Minor System   \      1.0 03:B5-MN           2.20      .187 No_date   28:00   29.51  n/a      .000
        {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
 R0002:C00339------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      CONTINUOUS STANDHYD   1.0 01:A8                .96      .099 No_date   28:00   34.21 .752      .000
        [XIMP=.71:TIMP=.71]
        [LOSS= 2 :CN= 75.0]
        [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
        [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 186.:MNI=.013:SCI=   .0]
        [IaRECimp=   4.00: IaRECper=   4.00]
        [SMIN= 33.81: SMAX=225.43: SK= .010]
 R0002:C00340------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      ADD HYD                1.0 02:A6-MJ            .00      .000 No_date    0:00     .00  n/a      .000
                       +     1.0 02:A8               .96      .099 No_date   28:00   34.21  n/a      .000
                    SUM=     1.0 01:A8T              .96      .099 No_date   28:00   34.21  n/a      .000
 R0002:C00341------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      COMPUTE DUALHYD        1.0 01:A8T              .96      .099 No_date   28:00   34.21  n/a      .000
       Major System   /      1.0 02:A8-MJ            .00      .000 No_date    0:00     .00  n/a      .000
       Minor System   \      1.0 03:A8-MN            .96      .099 No_date   28:00   34.21  n/a      .000
        {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
 R0002:C00342------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      ADD HYD                1.0 02:104-105       132.52     6.452 No_date   28:06   26.19  n/a      .000
                       +     1.0 02:B5-MN           2.20      .187 No_date   28:00   29.51  n/a      .000
                       +     1.0 02:A8-MN            .96      .099 No_date   28:00   34.21  n/a      .000
                       +     1.0 02:TODD_MN3j        .00      .000 No_date    0:00     .00  n/a      .000
                    SUM=     1.0 01:MH105         135.68     6.624 No_date   28:06   26.30  n/a      .000
 R0002:C00343------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      SAVE HYD               1.0 01:MH105         135.68     6.624 No_date   28:06   26.30  n/a      .000
        fname :MH105.0002
        remark:Total Flows at MH105
 R0002:C00344------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
  *   DIVERT HYD      ->     1.0 01:A8-MJ            .00      .000 No_date    0:00     .00  n/a      .000
             diverted <=     1.0 02:A8-MJ-JR         .00      .000 No_date    0:00     .00  n/a      .000
             diverted <=     1.0 03:A8-MJ-B6         .00      .000 No_date    0:00     .00  n/a      .000
 R0002:C00345------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      DIVERT HYD      ->     1.0 01:MH105         135.68     6.624 No_date   28:06   26.30  n/a      .000
             diverted <=     1.0 02:MH105-JR       16.59     3.620 No_date   28:06   26.30  n/a      .000
             diverted <=     1.0 03:MH105-B6      119.09     3.004 No_date   28:06   26.30  n/a      .000
 R0002:C00346------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      CONTINUOUS STANDHYD   1.0 01:B7               7.19      .479 No_date   28:01   25.66 .564      .000
        [XIMP=.41:TIMP=.54]
        [LOSS= 2 :CN= 75.0]
        [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
        [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 211.:MNI=.013:SCI=   .0]
        [IaRECimp=   4.00: IaRECper=   4.00]
        [SMIN= 33.81: SMAX=225.43: SK= .010]
 R0002:C00347------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      ADD HYD                1.0 02:B4-MJ            .00      .000 No_date    0:00     .00  n/a      .000
                       +     1.0 02:B7              7.19      .479 No_date   28:01   25.66  n/a      .000
                    SUM=     1.0 01:B7-B4MJ         7.19      .479 No_date   28:01   25.66  n/a      .000
 R0002:C00348------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      COMPUTE DUALHYD        1.0 01:B7-B4MJ         7.19      .479 No_date   28:01   25.66  n/a      .000
       Major System   /      1.0 02:B7R-MJ           .00      .000 No_date    0:00     .00  n/a      .000
       Minor System   \      1.0 03:B7R-MN          7.19      .479 No_date   28:01   25.66  n/a      .000
        {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
 R0002:C00349------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      ROUTE PIPE      ->     1.0 02:B7R-MN          7.19      .479 No_date   28:01   25.66  n/a      .000
       [RDT= 1.00] out<-     1.0 01:360-106A        7.19      .451 No_date   28:02   25.66  n/a      .000
        [L/S/n=  167./ .100/.013]
        {Vmax= 1.023:Dmax=  .558}
        [Din= 1.05:Dused= 1.05}
 R0002:C00350------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      CONTINUOUS STANDHYD   1.0 01:B6               3.29      .229 No_date   28:00   25.66 .564      .000
        [XIMP=.41:TIMP=.54]
        [LOSS= 2 :CN= 75.0]
        [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
        [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 148.:MNI=.013:SCI=   .0]
        [IaRECimp=   4.00: IaRECper=   4.00]
        [SMIN= 33.81: SMAX=225.43: SK= .010]
 R0002:C00351------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      COMPUTE DUALHYD        1.0 01:B6              3.29      .229 No_date   28:00   25.66  n/a      .000
       Major System   /      1.0 02:B6-MJ            .00      .000 No_date    0:00     .00  n/a      .000
       Minor System   \      1.0 03:B6-MN           3.29      .064 No_date   27:43   25.67  n/a      .000
        {MjSysSto=.1576E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
 R0002:C00352------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      CONTINUOUS STANDHYD   1.0 01:EX-LAND         32.50     2.093 No_date   28:02   26.85 .590      .000
        [XIMP=.50:TIMP=.50]
        [LOSS= 2 :CN= 74.0]
        [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
        [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 465.:MNI=.013:SCI=   .0]
        [IaRECimp=   4.00: IaRECper=   4.00]
        [SMIN= 36.67: SMAX=244.49: SK= .010]
 R0002:C00353------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      COMPUTE DUALHYD        1.0 01:EX-LAND        32.50     2.093 No_date   28:02   26.85  n/a      .000
       Major System   /      1.0 02:EX-LAND-MJ       .00      .000 No_date    0:00     .00  n/a      .000
       Minor System   \      1.0 03:EX-LAND-MN     32.50     2.093 No_date   28:02   26.85  n/a      .000
        {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
 R0002:C00354------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      ADD HYD                1.0 02:B7R-MJ           .00      .000 No_date    0:00     .00  n/a      .000
                       +     1.0 02:EX-LAND-MJ       .00      .000 No_date    0:00     .00  n/a      .000
                       +     1.0 02:B5-MJ            .00      .000 No_date    0:00     .00  n/a      .000
                       +     1.0 02:B6-MJ            .00      .000 No_date    0:00     .00  n/a      .000
                       +     1.0 02:B6-MN           3.29      .064 No_date   27:43   25.67  n/a      .000
                       +     1.0 02:A8-MJ-B6         .00      .000 No_date    0:00     .00  n/a      .000
                    SUM=     1.0 01:B6-B7ExMJ       3.29      .064 No_date   27:43   25.67  n/a      .000
 R0002:C00355------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      COMPUTE DUALHYD        1.0 01:B6-B7ExMJ       3.29      .064 No_date   27:43   25.67  n/a      .000
       Major System   /      1.0 02:B6R-MJ           .00      .000 No_date    0:00     .00  n/a      .000
       Minor System   \      1.0 03:B6R-MN          3.29      .064 No_date   27:43   25.67  n/a      .000
        {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
 R0002:C00356------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      ROUTE PIPE      ->     1.0 02:MH105-B6      119.09     3.004 No_date   28:06   26.30  n/a      .000
       [RDT= 1.00] out<-     1.0 01:105-106A      119.09     3.006 No_date   28:08   26.30  n/a      .000
        [L/S/n=  208./ .100/.013]
        {Vmax= 1.596:Dmax= 1.247}
        [Din= 1.80:Dused= 1.80}
 R0002:C00357------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      ADD HYD                1.0 02:360-106A        7.19      .451 No_date   28:02   25.66  n/a      .000
                       +     1.0 02:105-106A      119.09     3.006 No_date   28:08   26.30  n/a      .000
                       +     1.0 02:B6R-MN          3.29      .064 No_date   27:43   25.67  n/a      .000
                       +     1.0 02:B6R-MJ           .00      .000 No_date    0:00     .00  n/a      .000
                    SUM=     1.0 01:MH106A        129.57     3.466 No_date   28:03   26.25  n/a      .000
 R0002:C00358------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      SAVE HYD               1.0 01:MH106A        129.57     3.466 No_date   28:03   26.25  n/a      .000
        fname :MH106A.0002
        remark:Total Flows at MH106A
 R0002:C00359------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      ROUTE PIPE      ->     1.0 02:MH106A        129.57     3.466 No_date   28:03   26.25  n/a      .000
  *    [RDT= 1.00] out<-     1.0 01:106A-106      129.57     3.450 No_date   28:04   26.25  n/a      .000
        [L/S/n=  190./ .100/.013]
        {Vmax= 1.626:Dmax= 1.406}
        [Din= 1.80:Dused= 1.80}
 R0002:C00360------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      CONTINUOUS STANDHYD   1.0 01:A9               2.44      .240 No_date   28:01   34.21 .752      .000
        [XIMP=.71:TIMP=.71]
        [LOSS= 2 :CN= 75.0]
        [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
        [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 262.:MNI=.013:SCI=   .0]
        [IaRECimp=   4.00: IaRECper=   4.00]
        [SMIN= 33.81: SMAX=225.43: SK= .010]
 R0002:C00361------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      COMPUTE DUALHYD        1.0 01:A9              2.44      .240 No_date   28:01   34.21  n/a      .000
       Major System   /      1.0 02:A9-MJ            .00      .000 No_date    0:00     .00  n/a      .000
       Minor System   \      1.0 03:A9-MN           2.44      .240 No_date   28:01   34.21  n/a      .000
 R0002:C00362------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      ADD HYD                1.0 02:106A-106      129.57     3.450 No_date   28:04   26.25  n/a      .000
                       +     1.0 02:A9-MN           2.44      .240 No_date   28:01   34.21  n/a      .000
                    SUM=     1.0 01:MH106         132.01     3.666 No_date   28:03   26.40  n/a      .000
 R0002:C00363------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      SAVE HYD               1.0 01:MH106         132.01     3.666 No_date   28:03   26.40  n/a      .000
        fname :MH106.0002
        remark:Total Flows at MH106
 R0002:C00364------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      ROUTE PIPE      ->     1.0 02:MH106         132.01     3.666 No_date   28:03   26.40  n/a      .000
  *    [RDT= 1.00] out<-     1.0 01:106-107       132.01     3.602 No_date   28:06   26.40  n/a      .000
        [L/S/n=  123./ .100/.013]
        {Vmax= 1.631:Dmax= 1.482}
        [Din= 1.80:Dused= 1.81}
 R0002:C00365------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      CONTINUOUS STANDHYD   1.0 01:A10              4.14      .246 No_date   28:01   23.49 .516      .000
        [XIMP=.35:TIMP=.47]
        [LOSS= 2 :CN= 75.0]
        [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
        [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 183.:MNI=.013:SCI=   .0]
        [IaRECimp=   4.00: IaRECper=   4.00]
        [SMIN= 33.81: SMAX=225.43: SK= .010]
 R0002:C00366------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      COMPUTE DUALHYD        1.0 01:A10             4.14      .246 No_date   28:01   23.49  n/a      .000
       Major System   /      1.0 02:A10-MJ           .00      .000 No_date    0:00     .00  n/a      .000
       Minor System   \      1.0 03:A10-MN          4.14      .246 No_date   28:01   23.49  n/a      .000
        {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
 R0002:C00367------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      CONTINUOUS STANDHYD   1.0 01:A11             10.61      .781 No_date   28:02   29.20 .642      .000
        [XIMP=.53:TIMP=.62]
        [LOSS= 2 :CN= 75.0]
        [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
        [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 379.:MNI=.013:SCI=   .0]
        [IaRECimp=   4.00: IaRECper=   4.00]
        [SMIN= 33.81: SMAX=225.43: SK= .010]
 R0002:C00368------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      COMPUTE DUALHYD        1.0 01:A11            10.61      .781 No_date   28:02   29.20  n/a      .000
       Major System   /      1.0 02:A11-MJ           .00      .000 No_date    0:00     .00  n/a      .000
       Minor System   \      1.0 03:A11-MN         10.61      .781 No_date   28:02   29.20  n/a      .000
        {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
 R0002:C00369------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      ADD HYD                1.0 02:106-107       132.01     3.602 No_date   28:06   26.40  n/a      .000
                       +     1.0 02:A10-MN          4.14      .246 No_date   28:01   23.49  n/a      .000
                       +     1.0 02:A11-MN         10.61      .781 No_date   28:02   29.20  n/a      .000
                    SUM=     1.0 01:MH107         146.76     4.589 No_date   28:02   26.52  n/a      .000
 R0002:C00370------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      SAVE HYD               1.0 01:MH107         146.76     4.589 No_date   28:02   26.52  n/a      .000
        fname :MH107.0002
        remark:Total Flows at MH107
 R0002:C00371------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      ROUTE PIPE      ->     1.0 02:MH107         146.76     4.589 No_date   28:02   26.52  n/a      .000
  *    [RDT= 1.00] out<-     1.0 01:107-119       146.76     4.493 No_date   28:07   26.52  n/a      .000
        [L/S/n=  114./ .120/.013]
        {Vmax= 1.848:Dmax= 1.558}
        [Din= 1.80:Dused= 1.90}
 R0002:C00372------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      ROUTE PIPE      ->     1.0 02:107-119       146.76     4.493 No_date   28:07   26.52  n/a      .000
  *    [RDT= 1.00] out<-     1.0 01:119-108       146.76     4.469 No_date   28:07   26.52  n/a      .000
        [L/S/n=   66./ .120/.013]
        {Vmax= 1.838:Dmax= 1.546}
        [Din= 1.80:Dused= 1.88}
 R0002:C00373------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      CONTINUOUS STANDHYD   1.0 01:A12             12.29      .834 No_date   28:01   25.66 .564      .000
        [XIMP=.41:TIMP=.54]
        [LOSS= 2 :CN= 75.0]
        [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
        [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 183.:MNI=.013:SCI=   .0]
        [IaRECimp=   4.00: IaRECper=   4.00]
        [SMIN= 33.81: SMAX=225.43: SK= .010]
 R0002:C00374------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      COMPUTE DUALHYD        1.0 01:A12            12.29      .834 No_date   28:01   25.66  n/a      .000
       Major System   /      1.0 02:A12-MJ           .00      .000 No_date    0:00     .00  n/a      .000
       Minor System   \      1.0 03:A12-MN         12.29      .834 No_date   28:01   25.66  n/a      .000
        {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
 R0002:C00375------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      CONTINUOUS STANDHYD   1.0 01:A13              2.59      .239 No_date   28:02   34.21 .752      .000
        [XIMP=.71:TIMP=.71]
        [LOSS= 2 :CN= 75.0]
        [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
        [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 379.:MNI=.013:SCI=   .0]
        [IaRECimp=   4.00: IaRECper=   4.00]
        [SMIN= 33.81: SMAX=225.43: SK= .010]
 R0002:C00376------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      COMPUTE DUALHYD        1.0 01:A13             2.59      .239 No_date   28:02   34.21  n/a      .000
       Major System   /      1.0 02:A13-MJ           .00      .000 No_date    0:00     .00  n/a      .000
       Minor System   \      1.0 03:A13-MN          2.59      .239 No_date   28:02   34.21  n/a      .000
 R0002:C00377------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      CONTINUOUS STANDHYD   1.0 01:Pond-Block       2.94      .190 No_date   28:01   24.31 .534      .000
        [XIMP=.41:TIMP=.41]
        [LOSS= 2 :CN= 75.0]
        [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
        [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 183.:MNI=.013:SCI=   .0]
        [IaRECimp=   4.00: IaRECper=   4.00]
        [SMIN= 33.81: SMAX=225.43: SK= .010]
 R0002:C00378------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      ADD HYD                1.0 02:119-108       146.76     4.469 No_date   28:07   26.52  n/a      .000
                       +     1.0 02:A13-MN          2.59      .239 No_date   28:02   34.21  n/a      .000
                       +     1.0 02:A12-MN         12.29      .834 No_date   28:01   25.66  n/a      .000
                    SUM=     1.0 01:MH108         161.64     5.450 No_date   28:03   26.58  n/a      .000
 R0002:C00379------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      SAVE HYD               1.0 01:MH108         161.64     5.450 No_date   28:03   26.58  n/a      .000
        fname :MH108.0002
        remark:Total Flows at MH108
 R0002:C00380------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      ROUTE PIPE      ->     1.0 02:MH108         161.64     5.450 No_date   28:03   26.58  n/a      .000
  *    [RDT= 1.00] out<-     1.0 01:108-116       161.64     5.396 No_date   28:04   26.58  n/a      .000
        [L/S/n=   77./ .130/.013]
        {Vmax= 1.987:Dmax= 1.637}
        [Din= 1.80:Dused= 1.99}
 R0002:C00381------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      ROUTE PIPE      ->     1.0 02:108-116       161.64     5.396 No_date   28:04   26.58  n/a      .000
  *    [RDT= 1.00] out<-     1.0 01:116-corrig    161.64     5.363 No_date   28:04   26.58  n/a      .000
        [L/S/n=   80./ .130/.013]
        {Vmax= 1.983:Dmax= 1.631}
        [Din= 1.80:Dused= 1.99}
 R0002:C00382------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      ADD HYD                1.0 02:116-corrig    161.64     5.363 No_date   28:04   26.58  n/a      .000
                       +     1.0 02:Pond-Block      2.94      .190 No_date   28:01   24.31  n/a      .000
                    SUM=     1.0 01:Corrigan      164.58     5.522 No_date   28:04   26.54  n/a      .000
 R0002:C00383------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      SAVE HYD               1.0 01:Corrigan      164.58     5.522 No_date   28:04   26.54  n/a      .000
        fname :Corrigan.0002
        remark:HYD_COMMENT=["Total Flows at Corrigan Pond]
 R0002:C00384------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      ROUTE RESERVOIR ->     1.0 02:Corrigan      164.58     5.522 No_date   28:04   26.54  n/a      .000
                  out <=     1.0 01:Co-P          164.58     4.479 No_date   28:12   26.54  n/a      .000
             overflow <=     1.0 03:Co-P-OVF         .00      .000 No_date    0:00     .00  n/a      .000
       {MxStoUsed=.9246E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
 R0002:C00385------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      ADD HYD                1.0 02:Co-P-OVF         .00      .000 No_date    0:00     .00  n/a      .000
                       +     1.0 02:Co-P          164.58     4.479 No_date   28:12   26.54  n/a      .000
                       +     1.0 02:N_TO        54837.69    48.720 No_date   38:09   13.13  n/a      .000
                       +     1.0 02:MH105-JR       16.59     3.620 No_date   28:06   26.30  n/a      .000
                       +     1.0 02:A8-MJ-JR         .00      .000 No_date    0:00     .00  n/a      .000
                       +     1.0 02:A9-MJ            .00      .000 No_date    0:00     .00  n/a      .000
                       +     1.0 02:A10-MJ           .00      .000 No_date    0:00     .00  n/a      .000
                       +     1.0 02:A11-MJ           .00      .000 No_date    0:00     .00  n/a      .000
                       +     1.0 02:A12-MJ           .00      .000 No_date    0:00     .00  n/a      .000
                       +     1.0 02:A13-MJ           .00      .000 No_date    0:00     .00  n/a      .000
                    SUM=     1.0 01:corrig      55018.86    48.929 No_date   38:09   13.18  n/a      .000
 R0002:C00386------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      SAVE HYD               1.0 01:corrig      55018.86    48.929 No_date   38:09   13.18  n/a      .000
        fname :corrig.0002
        remark:Total Flows at Corrigan Pond
 #****************************************************************************
 #    Corrigan Pond 1
 #    - Rating curve obtained from Barrhaven South MSS modeling
 #    - Tributary Drainage Area to MSS Pond 1 = 145 ha
 #****************************************************************************
 #
 # Hydrograph from Corrigan Drain routed to Jockvale Road
 # Channel X-Section obtained from RVCA Hydraulic Model - Station 2462
 #
 R0002:C00387------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      ROUTE CHANNEL   ->     1.0 02:corrig      55018.86    48.929 No_date   38:09   13.18  n/a      .000
       [RDT= 1.00] out<-     1.0 01:N_MI        55018.86    48.925 No_date   38:13   13.18  n/a      .000
        [L/S/n=  580./ .445/.045]
        {Vmax= 1.453:Dmax= 1.221}
 #****************************************************************************
 #    Catchment MILLS
 #    - To SWM Facility north of the Jock
 #    - Primarily residental development
 #****************************************************************************
 R0002:C00388------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      CONTINUOUS STANDHYD   1.0 01:MILLS          175.99     7.048 No_date   28:08   22.75 .500      .000
        [XIMP=.38:TIMP=.38]
        [LOSS= 2 :CN= 74.0]
        [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
        [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI=1118.:MNI=.013:SCI=   .0]
        [IaRECimp=   4.00: IaRECper=   4.00]
        [SMIN= 36.67: SMAX=244.49: SK= .010]
 #****************************************************************************
 #    Chapman Mills SWM Pond
 #    - Rating curve obtained from CCL hydraulic modeling
 #****************************************************************************
 R0002:C00389------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      ROUTE RESERVOIR ->     1.0 02:MILLS         175.99     7.048 No_date   28:08   22.75  n/a      .000
                  out <=     1.0 01:MILL_P        175.99     2.401 No_date   28:46   22.75  n/a      .000
             overflow <=     1.0 03:MIL-OV           .00      .000 No_date    0:00     .00  n/a      .000
       {MxStoUsed=.1446E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
 R0002:C00390------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      ADD HYD                1.0 02:N_MI        55018.86    48.925 No_date   38:13   13.18  n/a      .000
                       +     1.0 02:MIL-OV           .00      .000 No_date    0:00     .00  n/a      .000
                       +     1.0 02:MILL_P        175.99     2.401 No_date   28:46   22.75  n/a      .000
                    SUM=     1.0 01:SN_MI       55194.85    49.162 No_date   38:11   13.21  n/a      .000
 R0002:C00391------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      SAVE HYD               1.0 01:SN_MI       55194.85    49.162 No_date   38:11   13.21  n/a      .000
        fname :SN_MI.0002
        remark:Total Flows at Jockvale Road
 #
 # Hydrograph from Jockvale Road routed to Heart's Desire
 # Channel X-Section obtained from RVCA Hydraulic Model - Station 689
 #
 R0002:C00392------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      ROUTE CHANNEL   ->     1.0 02:SN_MI       55194.85    49.162 No_date   38:11   13.21  n/a      .000
       [RDT= 1.00] out<-     1.0 01:N_DE        55194.85    49.114 No_date   38:33   13.21  n/a      .000
        [L/S/n= 1962./ .223/.045]
        {Vmax= 1.143:Dmax= 1.609}
 #****************************************************************************
```

```
#    Catchment DESIRE
#    - To Jock River (north of the Jock)
#    - Rural-estate subdivision (Heart's Desire Community)
#*****************************************************************************
R0002:C00393------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:DESIRE        23.78     .936 No_date   28:03   19.26 .423     .000
      [XIMP=.25:TIMP=.25]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 400.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
#*****************************************************************************
#    Catchment JOCKVA
#    - To Jockvale SWM Facility
#    - Residential development & golf course
#    - JFSA 2021-01-11 update JOCKVA after updating CORRIG as per IBI GROUP, July 2008.
#     JOCKVA area became 225.13 ha instead of 257.63 ha. JOCKVA separated into two areas JOCKVA and EX-LAND 32.5 ha as
#*****************************************************************************
R0002:C00394------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:JOCKVA       225.13   10.636 No_date   28:10   26.85 .590     .000
      [XIMP=.50:TIMP=.50]
      [LOSS= 2 :CN= 74.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI=1311.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 36.67: SMAX=244.49: SK= .010]
R0002:C00395------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:EX-LAND-MN    32.50    2.093 No_date   28:02   26.85  n/a     .000
                     +    1.0 02:JOCKVA       225.13   10.636 No_date   28:10   26.85  n/a     .000
                     +    1.0 02:B2-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                     +    1.0 02:B3-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                  SUM=    1.0 01:JOCKVA-TO    257.63   12.234 No_date   28:07   26.85  n/a     .000
R0002:C00396------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:JOCKVA-TO    257.63   12.234 No_date   28:07   26.85  n/a     .000
      fname :JOCKVA-TO.0002
      remark:Total Flows at KB first pond
#*****************************************************************************
#    Jockvale SWM Facility
#    - Rating curve obtained from Jockvale Servicing Study (CCL 1999)
#*****************************************************************************
R0002:C00397------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:JOCKVA-TO    257.63   12.234 No_date   28:07   26.85  n/a     .000
                out <=    1.0 01:JOCK_P       257.63    2.560 No_date   29:05   26.85  n/a     .000
           overflow <=    1.0 03:JO-OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.3334E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00398------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N_DE       55194.85   49.114 No_date   38:33   13.21  n/a     .000
                     +    1.0 02:DESIRE        23.78     .936 No_date   28:03   19.26  n/a     .000
                     +    1.0 02:JO-OVF          .00     .000 No_date    0:00     .00  n/a     .000
                     +    1.0 02:JOCK_P       257.63    2.560 No_date   29:05   26.85  n/a     .000
                  SUM=    1.0 01:SN_DE      55476.26   49.482 No_date   38:27   13.27  n/a     .000
R0002:C00399------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_DE      55476.26   49.482 No_date   38:27   13.27  n/a     .000
      fname :SN_DE.0002
      remark:Total Flows at Heart's Desire
#
# Hydrograph from Heart's Desire routed to Rideau River
# Channel X-Section obtained from RVCA Hydraulic Model - Station 0
#
R0002:C00400------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_DE      55476.26   49.482 No_date   38:27   13.27  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N1         55476.26   49.480 No_date   38:33   13.27  n/a     .000
      [L/S/n=  563./ .967/.045]
      {Vmax= 1.489:Dmax=  .800}
#*****************************************************************************
#    Catchment S-2
#    - To Jock River (north and south)
#    - Undeveloped floodplain and river
#*****************************************************************************
R0002:C00401------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:S-2          102.94    1.373 No_date   28:20   13.01 .286     .000
      [CN= 72.0: N= 3.00: Tp=  .40]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
R0002:C00402------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N1         55476.26   49.480 No_date   38:33   13.27  n/a     .000
                     +    1.0 02:S-2          102.94    1.373 No_date   28:20   13.01  n/a     .000
                  SUM=    1.0 01:SN_N1      55579.20   49.578 No_date   38:33   13.27  n/a     .000
R0002:C00403------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_N1      55579.20   49.578 No_date   38:33   13.27  n/a     .000
      fname :SN_N1.0002
      remark:Total Flows at Rideau River
############################################################################
  ** END OF RUN :    4
***************************************************************************************************
 RUN#:COMMAND#
R0005:C00001-----------------------------------------------------------------------------------------
     START
      [TZERO =    .00 hrs on       0]
      [METOUT=   2    (1=imperial, 2=metric output)]
      [NSTORM=   1 ]
      [NRUN  = 0005 ]
#*****************************************************************************
#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
#*****************************************************************************
#  Project Name: [Jock River]    Project Number: [1474-16]
#  Date        : 04-03-2021
#  Modeller    : [M.M.]
#  Company     : JFSAinc.
#  License #   :  2549237
#*****************************************************************************
# CALIBRATION OF SUMMER MODEL PARAMETERS
# USING CONTINUOUS SIMULATIONS
# Rainfall data from JFSA raingauge installed at site + other gauges by the City
# Use data collected from May 1st to July 14, 2003
# 2020-11-30 change TMJSTO in COMPUTE DUALHYD (TMJSTO = 0.1 instead of 0.0001)
# 2020-12-01 correct pond curve values
# 2020-12-01 change W_CLAR_BRAZ XIMP to 0.55, SLPI=[0.5](%) (impervious slope), and LGI up to 700m
# 2021-02-19 Change the slope for ROUTE CHANNEL Station 2462 (NHYDout=["N_TO"] ,NHYDin=["SN_TO"]) from 0.033 % (as per S
# 2021-02-19 Change the slope for ROUTE CHANNEL Station 5002 (NHYDout=["N_WC"] ,NHYDin=["SN_CE"]) from 0.01 % (as per St
# ---------------------------------------------------------------------------
R0005:C00002-----------------------------------------------------------------------------------------
     READ STORM
      Filename = storm.001
      Comment  = Pluie SCS de 24 hres 1:5 ans pour Ottawa CDA
      [SDT=10.00:SDUR=  24.00:PTOT=  57.12]
R0005:C00003-----------------------------------------------------------------------------------------
     MODIFY STORM
      [RFACT=  1.00:TSHIFT= 960.00 min]
      [SDT=10.00:SDUR=  40.00:PTOT=  57.12]
R0005:C00004-----------------------------------------------------------------------------------------
     DEFAULT VALUES
      Filename = T:\PROJ\1474-16\Design\20201026-QuantityControlAnalysis\SWMHYMO\SMR-Model\updated3\CitiGate.DEF
      ICASEdv  = 1 (read and print data)
      FileTitle= File comment: [Based onvarious calibration exercises in Onta
                 THE FOLLOWING PARAMETERS ARE USED IN THE DESIGN STANDHYD COM
      Horton's infiltration equation parameters:
      [Fo= 76.20 mm/hr] [Fc=13.20 mm/hr] [DCAY= 4.14 /hr] [F=  .00 mm]
      Parameters for PERVIOUS surfaces in STANDHYD:
      [IAper=   4.67 mm] [LGP=50.00 m] [MNP= .250]
      Parameters for IMPERVIOUS surfaces in STANDHYD:
      [IAimp=   1.57 mm] [CLI= 1.50]   [MNI= .013]
      Parameters used in NASHYD:
      [Ia=   4.67 mm] [N= 3.00]
      Average monthly Pan Evaporation data in    (mm)
   JAN   FEB   MAR   APR   MAY   JUN   JUL   AUG   SEP   OCT   NOV   DEC
   .00   .00   .00   .00   .00   .00   .00   .00   .00   .00   .00   .00
      Average monthly Potential Evapotranspiration in    (mm)
   JAN   FEB   MAR   APR   MAY   JUN   JUL   AUG   SEP   OCT   NOV   DEC
   .00   .00   .00   .00   .00   .00   .00   .00   .00   .00   .00   .00
R0005:C00005-----------------------------------------------------------------------------------------
     COMPUTE API
      [APIini= 50.00: APIkdy= .8500: APIkdt= .9989]
      {APImax= 90.83: APIavg= 60.09: APImin= 44.87}
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.32
R0005:C00006------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:JR_HW       3680.00    9.398 No_date   37:02   16.41 .287     .000
      [CN= 64.0: N= 3.00: Tp= 7.13]
      [IaREC= 4.00: SMIN= 57.05: SMAX=380.32: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.32
R0005:C00007------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_13        971.00    3.405 No_date   32:36   15.29 .268     .000
      [CN= 61.0: N= 3.00: Tp= 3.76]
      [IaREC= 4.00: SMIN= 64.50: SMAX=430.01: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.80
R0005:C00008------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:JR_GWM      3074.00    4.682 No_date   39:59   13.23 .232     .000
      [CN= 55.0: N= 3.00: Tp=11.33]
      [IaREC= 4.00: SMIN= 83.24: SMAX=554.96: SK= .010]
      [InterEventTime=  12.00]
R0005:C00009------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:JR_ASH      1781.00    8.521 No_date   32:43   20.12 .352     .000
      [CN= 72.0: N= 3.00: Tp= 3.91]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
R0005:C00010------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_11        500.00    4.354 No_date   29:22   17.18 .301     .000
      [CN= 66.0: N= 3.00: Tp= 1.24]
      [IaREC= 4.00: SMIN= 52.62: SMAX=350.79: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.80
R0005:C00011------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:NN_CK       1917.00    6.210 No_date   34:31   17.18 .301     .000
      [CN= 66.0: N= 3.00: Tp= 5.29]
      [IaREC= 4.00: SMIN= 52.62: SMAX=350.79: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.52
R0005:C00012------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_10       5666.00   16.924 No_date   38:02   20.12 .352     .000
      [CN= 72.0: N= 3.00: Tp= 8.00]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.75
R0005:C00013------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:KG_CK       8376.00   16.342 No_date   39:59   17.18 .301     .000
      [CN= 66.0: N= 3.00: Tp=11.66]
      [IaREC= 4.00: SMIN= 52.62: SMAX=350.79: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.68
R0005:C00014------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_9        1132.00    6.963 No_date   30:55   19.24 .337     .000
      [CN= 70.0: N= 3.00: Tp= 2.51]
      [IaREC= 4.00: SMIN= 43.07: SMAX=287.10: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.82
R0005:C00015------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:NC_CK       4464.00    8.109 No_date   39:59   15.66 .274     .000
      [CN= 62.0: N= 3.00: Tp=11.32]
      [IaREC= 4.00: SMIN= 61.90: SMAX=412.66: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.80
R0005:C00016------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_8         131.00    1.298 No_date   28:57   16.03 .281     .000
      [CN= 63.0: N= 3.00: Tp=  .90]
      [IaREC= 4.00: SMIN= 59.42: SMAX=396.11: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.65
R0005:C00017------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:HB_DR       3854.00    9.385 No_date   38:41   17.18 .301     .000
      [CN= 66.0: N= 3.00: Tp= 8.42]
      [IaREC= 4.00: SMIN= 52.62: SMAX=350.79: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.82
R0005:C00018------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_7        3197.00    7.027 No_date   36:28   13.89 .243     .000
      [CN= 57.0: N= 3.00: Tp= 6.65]
      [IaREC= 4.00: SMIN= 76.32: SMAX=508.81: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.75
R0005:C00019------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_6         165.00     .641 No_date   33:06   17.58 .308     .000
      [CN= 67.0: N= 3.00: Tp= 4.18]
      [IaREC= 4.00: SMIN= 50.55: SMAX=336.97: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.67
R0005:C00020------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:VG_DR       1332.00    4.803 No_date   35:19   20.12 .352     .000
      [CN= 72.0: N= 3.00: Tp= 5.95]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
R0005:C00021------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_5         224.00    4.100 No_date   28:45   22.97 .402     .000
      [CN= 77.0: N= 3.00: Tp=  .75]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.20
R0005:C00022------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:FL_CK       4945.00   22.837 No_date   33:22   21.04 .368     .000
      [CN= 74.0: N= 3.00: Tp= 4.45]
      [IaREC= 4.00: SMIN= 36.67: SMAX=244.49: SK= .010]
      [InterEventTime=  12.00]
R0005:C00023------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_5A2        20.00     .483 No_date   28:36   25.62 .448     .000
      [CN= 81.0: N= 3.00: Tp=  .62]
      [IaREC= 4.00: SMIN= 25.21: SMAX=168.09: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.61
R0005:C00024------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_5A1      1412.00    4.646 No_date   37:58   21.98 .385     .000
      [CN= 75.0: N= 3.00: Tp= 8.00]
      [IaREC= 4.00: SMIN= 33.81: SMAX=225.43: SK= .010]
      [InterEventTime=  12.00]
R0005:C00025------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_4         585.00    6.688 No_date   29:57   25.62 .448     .000
      [CN= 81.0: N= 3.00: Tp= 1.75]
      [IaREC= 4.00: SMIN= 25.21: SMAX=168.09: SK= .010]
      [InterEventTime=  12.00]
R0005:C00026------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:LM_CK       1021.00    8.861 No_date   30:48   25.07 .439     .000
      [CN= 80.0: N= 3.00: Tp= 2.46]
      [IaREC= 4.00: SMIN= 26.32: SMAX=175.50: SK= .010]
      [InterEventTime=  12.00]
R0005:C00027------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_2         177.00    3.240 No_date   28:45   22.97 .402     .000
      [CN= 77.0: N= 3.00: Tp=  .75]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0005:C00028------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SM_DR       1122.00    8.165 No_date   31:48   25.62 .448     .000
      [CN= 81.0: N= 3.00: Tp= 3.25]
      [IaREC= 4.00: SMIN= 25.21: SMAX=168.09: SK= .010]
      [InterEventTime=  12.00]
R0005:C00029------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:MO_DR       2737.00   17.859 No_date   31:33   22.47 .393     .000
      [CN= 76.0: N= 3.00: Tp= 3.03]
      [IaREC= 4.00: SMIN= 32.46: SMAX=216.39: SK= .010]
      [InterEventTime=  12.00]
#
# Routing hydrographs
#
# Starting with the addition of Jock River Headwater and Subwatershed 13
#
R0005:C00030------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:JR_HW       3680.00    9.398 No_date   37:02   16.41  n/a     .000
                     +    1.0 02:SW_13        971.00    3.405 No_date   32:36   15.29  n/a     .000
                  SUM=    1.0 01:S_N13       4651.00   11.949 No_date   35:33   16.17  n/a     .000
#
# Sum of hydrographs from Node 13 routed to Node 13A
# (Approximated cross-section - see cross-section 258)
# Use n=0.04 for summer conditions and n=0.025 for spring conditions
#
R0005:C00031------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N13       4651.00   11.949 No_date   35:33   16.17  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N13A        4651.00    9.514 No_date   39:57   16.17  n/a     .000
      [L/S/n= 9074./ .022/.040]
      {Vmax=  .478:Dmax= 3.020}
#
# Addition of Subwatershed Jock River at Goodwood Marsh to Node 13A
#
R0005:C00032------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N13A        4651.00    9.514 No_date   39:57   16.17  n/a     .000
                     +    1.0 02:JR_GWM      3074.00    4.682 No_date   39:59   13.23  n/a     .000
                  SUM=    1.0 01:SN13A       7725.00   14.196 No_date   39:59   15.00  n/a     .000
#
# Insertion of a reservoir to simulate the effects of the Goodwood Marsh
#
R0005:C00033------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:SN13A       7725.00   14.196 No_date   39:59   15.00  n/a     .000
                out <=    1.0 01:RES_GM      7725.00    3.149 No_date   57:25   15.00  n/a     .000
     {MxStoUsed=.6321E+02  m3}
#
R0005:C00034------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:RES_GM      7725.00    3.149 No_date   57:25   15.00  n/a     .000
      fname :H_RESGM
      remark:Outflow from Res GM
# Output of Reservoir Goodwood Marsh routed from Node 13A to Node 12
# (Approximated cross-section - see cross-section 258)
# Use n=0.04 for summer conditions and n=0.025 for spring conditions
R0005:C00035------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:RES_GM      7725.00    3.149 No_date   57:25   15.00  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N12         7725.00    3.137 No_date   60:12   15.00  n/a     .000
      [L/S/n= 5926./ .076/.040]
      {Vmax=  .527:Dmax= 1.429}
#
# Addition of Subwatershed Jock River at Ashton to Node 12
#
R0005:C00036------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N12         7725.00    3.137 No_date   60:12   15.00  n/a     .000
                     +    1.0 02:JR_ASH      1781.00    8.521 No_date   32:43   20.12  n/a     .000
                  SUM=    1.0 01:S_N12       9506.00   10.498 No_date   32:46   15.96  n/a     .000
R0005:C00037------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:S_N12       9506.00   10.498 No_date   32:46   15.96  n/a     .000
      fname :H_SN12
      remark:flow at S_N12 near Ashton
#
```

```
# Sum of hydrographs from Node 12 routed to Node 11
# (Approximated cross-section - see cross-section 258)
# Use n=0.04 for summer conditions and n=0.025 for spring conditions
#
# Sum of hydrographs from Node 12 routed to Node 11 with Dummy section 248
#
R0005:C00038------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N12       9506.00   10.498 No_date   32:46   15.96  n/a     .000
     [RDT= 1.00] out<-    1.0 01:Dum11       9506.00   10.383 No_date   33:07   15.96  n/a     .000
      [L/S/n=  972./ .054/.040]
      {Vmax=  .648:Dmax= 2.406}
#
# Addition of Subwatershed 11 and No Name Creek to Node 11
#
R0005:C00039------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:Dum11       9506.00   10.383 No_date   33:07   15.96  n/a     .000
                    +     1.0 02:SW_11        500.00    4.354 No_date   29:22   17.18  n/a     .000
                    +     1.0 02:NN_CK       1917.00    6.210 No_date   34:31   17.18  n/a     .000
                 SUM=     1.0 01:S_N11      11923.00   17.560 No_date   33:09   16.21  n/a     .000
#
# Sum of hydrographs from Node 11 routed to Node 10
# Section 1
#
R0005:C00040------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N11      11923.00   17.560 No_date   33:09   16.21  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N10        11923.00   12.006 No_date   38:17   16.21  n/a     .000
      [L/S/n=14028./ .157/.040]
      {Vmax=  .461:Dmax= 1.087}
#
# Addition of Subwatershed 10 to Node 10
#
R0005:C00041------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N10        11923.00   12.006 No_date   38:17   16.21  n/a     .000
                    +     1.0 02:SW_10       5666.00   16.924 No_date   38:02   20.12  n/a     .000
                 SUM=     1.0 01:S_N10      17589.00   28.927 No_date   38:09   17.47  n/a     .000
R0005:C00042------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:S_N10      17589.00   28.927 No_date   38:09   17.47  n/a     .000
      fname :H_SN10
      remark:flow at S_N10: N10 + SW_10
# Addition of Kings Creek to S_N10
#
R0005:C00043------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:S_N10      17589.00   28.927 No_date   38:09   17.47  n/a     .000
                    +     1.0 02:KG_CK       8376.00   16.342 No_date   39:59   17.18  n/a     .000
                 SUM=     1.0 01:S_N10A     25965.00   44.722 No_date   39:35   17.37  n/a     .000
#
# Sum of hydrographs from Node 10 routed to Node 9
# Section 2
#
R0005:C00044------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N10A     25965.00   44.722 No_date   39:35   17.37  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N9         25965.00   43.534 No_date   39:59   17.37  n/a     .000
      [L/S/n= 3982./ .075/.040]
      {Vmax=  .664:Dmax= 1.502}
#
# Addition of Subwatershed 9 and Nichols Creek to Node 9
#
R0005:C00045------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N9         25965.00   43.534 No_date   39:59   17.37  n/a     .000
                    +     1.0 02:SW_9        1132.00    6.963 No_date   30:55   19.24  n/a     .000
                    +     1.0 02:NC_CK       4464.00    8.109 No_date   39:59   15.66  n/a     .000
                 SUM=     1.0 01:S_N9       31561.00   53.366 No_date   39:59   17.20  n/a     .000
#
# Sum of hydrographs from Node 9 routed to Node 8
# Section 3
#
R0005:C00046------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N9       31561.00   53.366 No_date   39:59   17.20  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N8         31561.00   49.404 No_date   39:59   17.20  n/a     .000
      [L/S/n= 2269./ .088/.045]
      {Vmax=  .370:Dmax= 1.520}
#
# Addition of Subwatershed 8 and Hobb's Drain to Node 8
#
R0005:C00047------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N8         31561.00   49.404 No_date   39:59   17.20  n/a     .000
                    +     1.0 02:SW_8         131.00    1.298 No_date   28:57   16.03  n/a     .000
                    +     1.0 02:HB_DR       3854.00    9.385 No_date   38:41   17.18  n/a     .000
                 SUM=     1.0 01:S_N8       35546.00   58.845 No_date   39:59   17.19  n/a     .000
#
# Sum of hydrographs from Node 8 routed to Node 7
# Section 4
#
R0005:C00048------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N8       35546.00   58.845 No_date   39:59   17.19  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N7         35546.00   48.127 No_date   45:08   17.19  n/a     .000
      [L/S/n= 3750./ .053/.070]
      {Vmax=  .208:Dmax= 1.855}
#
# Addition of Subwatershed 7 to Node 7
#
R0005:C00049------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N7         35546.00   48.127 No_date   45:08   17.19  n/a     .000
                    +     1.0 02:SW_7        3197.00    7.027 No_date   36:28   13.89  n/a     .000
                 SUM=     1.0 01:S_N7       38743.00   51.395 No_date   44:14   16.92  n/a     .000
R0005:C00050------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:S_N7       38743.00   51.395 No_date   44:14   16.92  n/a     .000
      fname :H_SN7
      remark:flow at S_N7: N7 + SW_7
# Insertion of a reservoir to simulate the effects of the Richmond Fen.
# Storage area and volumes were estimated from available topo maps.
# Release rate from fen was assumed to be controlled by the downstream
# river cross-section for summer conditions.  It is was assumed that for up to
# 0.75 m of water, the main channel of the river provided the storage.  Above
# this depth, the wetland starts to signigicantly store water.
#
R0005:C00051------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:S_N7       38743.00   51.395 No_date   44:14   16.92  n/a     .000
                out <=    1.0 01:RES_RF     38743.00   27.976 No_date   59:12   16.92  n/a     .000
     {MxStoUsed=.1784E+03  m3}
R0005:C00052------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:RES_RF     38743.00   27.976 No_date   59:12   16.92  n/a     .000
      fname :H_ResRF
      remark:outflow of Richmond Fen
#
# Sum of hydrographs from Node 7 routed to Node 6
# Section 5
#
R0005:C00053------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:RES_RF     38743.00   27.976 No_date   59:12   16.92  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N6         38743.00   27.930 No_date   60:29   16.92  n/a     .000
      [L/S/n= 3056./ .082/.025]
      {Vmax=  .460:Dmax=  .895}
#
# Addition of Subwatershed 6 and Van Gaal Drain to Node 6
#
R0005:C00054------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N6         38743.00   27.930 No_date   60:29   16.92  n/a     .000
                    +     1.0 02:SW_6         165.00     .641 No_date   33:06   17.58  n/a     .000
                    +     1.0 02:VG_DR       1332.00    4.803 No_date   35:19   20.12  n/a     .000
                 SUM=     1.0 01:S_N6       40240.01   27.944 No_date   60:06   17.03  n/a     .000
#
# Sum of hydrographs from Node 6 routed to Node 5
# Section 6
#
R0005:C00055------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N6       40240.01   27.944 No_date   60:06   17.03  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N5         40240.01   27.922 No_date   60:57   17.03  n/a     .000
      [L/S/n= 1852./ .054/.035]
      {Vmax=  .397:Dmax= 1.002}
#
# Addition of Subwatershed 5 and Flowing Creek to Node 5
#
R0005:C00056------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N5         40240.01   27.922 No_date   60:57   17.03  n/a     .000
                    +     1.0 02:SW_5         224.00    4.100 No_date   28:45   22.97  n/a     .000
                    +     1.0 02:FL_CK       4945.00   22.837 No_date   33:22   21.04  n/a     .000
                 SUM=     1.0 01:S_N5       45409.01   43.566 No_date   35:28   17.49  n/a     .000
#
# Sum of hydrographs from Node 5 routed to Node 5A
# Section 7
#
R0005:C00057------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N5       45409.01   43.566 No_date   35:28   17.49  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N5A        45409.01   43.490 No_date   35:47   17.49  n/a     .000
      [L/S/n=  556./ .090/.040]
      {Vmax=  .465:Dmax= 1.060}
#
# Addition of Subwatershed 5A1 and Subwatershed 5A2 to Node 5A
#
R0005:C00058------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N5A        45409.01   43.490 No_date   35:47   17.49  n/a     .000
                    +     1.0 02:SW_5A2        20.00     .483 No_date   28:36   25.62  n/a     .000
                    +     1.0 02:SW_5A1      1412.00    4.646 No_date   37:58   21.98  n/a     .000
                 SUM=     1.0 01:S_N5A      46841.01   47.976 No_date   35:58   17.63  n/a     .000
#
# Sum of hydrographs from Node 5A routed to Node 4
# Section 8
#
R0005:C00059------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N5A      46841.01   47.976 No_date   35:58   17.63  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N4         46841.01   46.217 No_date   37:26   17.63  n/a     .000
      [L/S/n= 4630./ .043/.035]
      {Vmax=  .756:Dmax= 3.116}
#
# Addition of Subwatershed 4 and Leamy Creek to Node 4
#
R0005:C00060------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N4         46841.01   46.217 No_date   37:26   17.63  n/a     .000
                    +     1.0 02:SW_4         585.00    6.688 No_date   29:57   25.62  n/a     .000
                    +     1.0 02:LM_CK       1021.00    8.861 No_date   30:48   25.07  n/a     .000
                 SUM=     1.0 01:S_N4       48447.00   50.308 No_date   36:47   17.89  n/a     .000
R0005:C00061------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:S_N4       48447.00   50.308 No_date   36:47   17.89  n/a     .000
      fname :S_N4.0005
      remark:flow at S_N4
#
# Sum of hydrographs from Node 4 routed to Node 2
# Section 9
#
R0005:C00062------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N4       48447.00   50.308 No_date   36:47   17.89  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N2         48447.00   50.131 No_date   37:08   17.89  n/a     .000
      [L/S/n= 1667./ .060/.040]
      {Vmax=  .781:Dmax= 3.131}
#
# Addition of Subwatershed 2 with Monohan Drain and Smith Drain to Node 2
#
R0005:C00063------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N2         48447.00   50.131 No_date   37:08   17.89  n/a     .000
                    +     1.0 02:SW_2         177.00    3.240 No_date   28:45   22.97  n/a     .000
                    +     1.0 02:SM_DR       1122.00    8.165 No_date   31:48   25.62  n/a     .000
                    +     1.0 02:MO_DR       2737.00   17.859 No_date   31:33   22.47  n/a     .000
                 SUM=     1.0 01:S_N2       52483.00   67.222 No_date   33:17   18.31  n/a     .000
R0005:C00064------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:S_N2       52483.00   67.222 No_date   33:17   18.31  n/a     .000
      fname :H_SN2
      remark:flow at S_N2 Jock River Gauge at Moodie Dr.
#
# Sum of hydrographs from Node 2 routed to Node 1
# Section 10
#
#******************************************************************************
#
# Hydrograph from Node 2 routed to Node 416
# Channel X-Section obtained from RVCA Hydraulic Model - Station 9025
#
R0005:C00065------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N2       52483.00   67.222 No_date   33:17   18.31  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N_416      52483.00   65.664 No_date   34:34   18.31  n/a     .000
      [L/S/n= 2327./ .050/.055]
      {Vmax=  .658:Dmax= 2.660}
#******************************************************************************
#    Catchment SW-1a
#    - Portion of RVCA catchment SW_1 outside of Reach 1 subwatershed
#    - Undeveloped agricultural land
#******************************************************************************
R0005:C00066------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_1a        536.42    3.012 No_date   31:18   19.00 .333     .000
      [CN= 72.0: N= 3.00: Tp= 2.79]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
R0005:C00067------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-Okeefe    44.93    4.591 No_date   28:03   42.00 .735     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .75:LGI= 547.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0005:C00068------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N_416      52483.00   65.664 No_date   34:34   18.31  n/a     .000
                    +     1.0 02:SW_1a        536.42    3.012 No_date   31:18   19.00  n/a     .000
                    +     1.0 02:S-1-Okeefe    44.93    4.591 No_date   28:03   42.00  n/a     .000
                 SUM=     1.0 01:SN_416     53064.36   67.942 No_date   34:06   18.33  n/a     .000
R0005:C00069------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_416     53064.36   67.942 No_date   34:06   18.33  n/a     .000
      fname :SN_416.0005
      remark:Total Flows at Highway 416
#
# Hydrograph from Node 416 routed to Node at Okeefe drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 7245
#
R0005:C00070------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_416     53064.36   67.942 No_date   34:06   18.33  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N_OK       53064.36   67.912 No_date   34:06   18.33  n/a     .000
      [L/S/n=  497./ .302/.055]
      {Vmax= 1.355:Dmax= 2.252}
#******************************************************************************
#    Catchment OKEEFE
#    - To O'Keefe drain (north of the Jock)
#    - Developed with assumed 43% imp.
#    - 2020-12-01 add Okeefe model (Area 513.02 HA) instead of current Okeefe (Area 513.02 HA)
#    - 2020-11-20 Okeefe detailed model was added as per the NOVATECH SWMHYMO model (Citi-Gate 2014).
#******************************************************************************
R0005:C00071------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:O-1           63.72     .514 No_date   28:59   13.88 .243     .000
      [CN= 61.0: N= 3.00: Tp=  .90]
      [IaREC= 4.00: SMIN= 64.50: SMAX=430.01: SK= .010]
      [InterEventTime=  12.00]
R0005:C00072------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:O-1           63.72     .514 No_date   28:59   13.88  n/a     .000
     [RDT= 1.00] out<-    1.0 01:O-1R          63.72     .470 No_date   29:19   13.88  n/a     .000
      [L/S/n=  960./ .630/.043]
      {Vmax=  .682:Dmax=  .283}
R0005:C00073------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:O-2           28.61     .183 No_date   29:14   12.96 .227     .000
      [CN= 57.0: N= 3.00: Tp= 1.10]
      [IaREC= 4.00: SMIN= 76.32: SMAX=508.81: SK= .010]
      [InterEventTime=  12.00]
R0005:C00074------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:O-4           46.94     .222 No_date   29:01    9.87 .173     .000
      [CN= 49.0: N= 3.00: Tp=  .90]
      [IaREC= 4.00: SMIN=104.59: SMAX=697.25: SK= .010]
      [InterEventTime=  12.00]
R0005:C00075------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:O-1R          63.72     .470 No_date   29:19   13.88  n/a     .000
                    +     1.0 02:O-2           28.61     .183 No_date   29:14   12.96  n/a     .000
                    +     1.0 02:O-4           46.94     .222 No_date   29:01    9.87  n/a     .000
                 SUM=     1.0 01:OKF-N        139.27     .867 No_date   29:14   12.34  n/a     .000
R0005:C00076------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:OKF-N        139.27     .867 No_date   29:14   12.34  n/a     .000
     [RDT= 1.00] out<-    1.0 01:OKF-NR       139.27     .866 No_date   29:17   12.34  n/a     .000
      [L/S/n=  210./ .810/.043]
      {Vmax=  .853:Dmax=  .550}
R0005:C00077------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:O-6           16.46     .074 No_date   28:46    8.71 .152     .000
      [CN= 43.0: N= 3.00: Tp=  .70]
      [IaREC= 4.00: SMIN=134.47: SMAX=896.47: SK= .010]
      [InterEventTime=  12.00]
R0005:C00078------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:O-3           39.67     .605 No_date   28:25   15.80 .277     .000
      [XIMP=.15:TIMP=.30]
      [LOSS= 2 :CN= 50.0]
      [Pervious     area: IAper= 4.67:SLPP= .32:LGP= 440.:MNP=.035:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .32:LGI=1880.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 99.77: SMAX=665.12: SK= .010]
R0005:C00079------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:O-5           60.63    1.453 No_date   28:11   17.75 .311     .000
      [XIMP=.13:TIMP=.26]
      [LOSS= 2 :CN= 61.0]
      [Pervious     area: IAper= 4.67:SLPP=1.38:LGP= 550.:MNP=.035:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.38:LGI=1450.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 64.50: SMAX=430.01: SK= .010]
R0005:C00080------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:OKF-NR       139.27     .866 No_date   29:17   12.34  n/a     .000
                    +     1.0 02:O-3           39.67     .605 No_date   28:25   15.80  n/a     .000
                    +     1.0 02:O-5           60.63    1.453 No_date   28:11   17.75  n/a     .000
                    +     1.0 02:O-6           16.46     .074 No_date   28:46    8.71  n/a     .000
                 SUM=     1.0 01:PT1          256.03    2.312 No_date   28:24   13.92  n/a     .000
R0005:C00081------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:O-7            5.28     .041 No_date   28:37   11.36 .199     .000
      [CN= 54.0: N= 3.00: Tp=  .60]
      [IaREC= 4.00: SMIN= 87.01: SMAX=580.07: SK= .010]
      [InterEventTime=  12.00]
R0005:C00082------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:PT1          256.03    2.312 No_date   28:24   13.92  n/a     .000
                    +     1.0 02:O-7            5.28     .041 No_date   28:37   11.36  n/a     .000
                 SUM=     1.0 01:FF           261.31    2.351 No_date   28:25   13.87  n/a     .000
R0005:C00083------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:FF           261.31    2.351 No_date   28:25   13.87  n/a     .000
     [RDT= 1.00] out<-    1.0 01:DRAIN1       261.31    2.298 No_date   28:31   13.87  n/a     .000
      [L/S/n=  302./1.000/.043]
      {Vmax=  .817:Dmax=  .624}
R0005:C00084------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:D1             1.17     .044 No_date   28:12   23.49 .411     .000
      [CN= 84.0: N= 3.00: Tp=  .28]
      [IaREC= 4.00: SMIN= 21.09: SMAX=140.62: SK= .010]
      [InterEventTime=  12.00]
R0005:C00085------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A1             2.50     .337 No_date   28:01   44.03 .771     .000
      [XIMP=.68:TIMP=.85]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 224.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0005:C00086------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:A1             2.50     .337 No_date   28:01   44.03  n/a     .000
                out <=    1.0 01:A1-STR         2.50     .076 No_date   28:28   44.03  n/a     .000
           overflow <=    1.0 03:A1-OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.5227E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00087------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:ST-2            .59     .062 No_date   28:00   33.25 .582     .000
      [XIMP=.46:TIMP=.57]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 109.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0005:C00088------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:ST-2            .59     .062 No_date   28:00   33.25  n/a     .000
                out <=    1.0 01:ST2STR          .59     .052 No_date   28:03   33.25  n/a     .000
           overflow <=    1.0 03:ST2OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.1200E-02  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00089------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:O-8           60.55     .658 No_date   29:05   18.08 .317     .000
      [CN= 69.0: N= 3.00: Tp= 1.00]
      [IaREC= 4.00: SMIN= 44.82: SMAX=298.82: SK= .010]
      [InterEventTime=  12.00]
R0005:C00090------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:O-8           60.55     .658 No_date   29:05   18.08  n/a     .000
     [RDT= 1.00] out<-    1.0 01:O8PIPE        60.55     .654 No_date   29:09   18.08  n/a     .000
      [L/S/n=  335./ .100/.013]
```

```
          {Vmax=  .991:Dmax=  .368}
          {HGTH= 1.20:WDTH= 1.80}
 R0005:C00091------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      ADD HYD                1.0 02:DRAIN1       261.31    2.298 No_date   28:31   13.87  n/a      .000
                        +    1.0 02:D1             1.17     .044 No_date   28:12   23.49  n/a      .000
                        +    1.0 02:A1-STR         2.50     .076 No_date   28:28   44.03  n/a      .000
                        +    1.0 02:A1-OVF          .00     .000 No_date    0:00     .00  n/a      .000
                        +    1.0 02:ST2STR          .59     .052 No_date   28:03   33.25  n/a      .000
                        +    1.0 02:ST2OVF          .00     .000 No_date    0:00     .00  n/a      .000
                        +    1.0 02:O8PIPE        60.55     .654 No_date   29:09   18.08  n/a      .000
                     SUM=    1.0 01:ST2-IN       326.12    2.907 No_date   28:39   14.95  n/a      .000
 R0005:C00092------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      CONTINUOUS STANDHYD   1.0 01:A7             3.51     .460 No_date   28:02   44.03 .771     .000
          [XIMP=.68:TIMP=.85]
          [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
          [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
          [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 265.:MNI=.013:SCI=   .0]
          [IaRECimp=   4.00: IaRECper=   4.00]
 R0005:C00093------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      ROUTE RESERVOIR ->    1.0 02:A7             3.51     .460 No_date   28:02   44.03  n/a      .000
                   out <=    1.0 01:A7-STR         3.51     .108 No_date   28:29   44.03  n/a      .000
              overflow <=    1.0 03:A7-OVF          .00     .000 No_date    0:00     .00  n/a      .000
        {MxStoUsed=.7349E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
 R0005:C00094------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      CONTINUOUS STANDHYD   1.0 01:ST-3            .71     .073 No_date   28:00   33.25 .582     .000
          [XIMP=.46:TIMP=.57]
          [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
          [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
          [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 119.:MNI=.013:SCI=   .0]
          [IaRECimp=   4.00: IaRECper=   4.00]
 R0005:C00095------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      ROUTE RESERVOIR ->    1.0 02:ST-3            .71     .073 No_date   28:00   33.25  n/a      .000
                   out <=    1.0 01:ST3STR          .71     .063 No_date   28:03   33.25  n/a      .000
              overflow <=    1.0 03:ST3OVF          .00     .000 No_date    0:00     .00  n/a      .000
        {MxStoUsed=.1203E-02  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
 R0005:C00096------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      ADD HYD                1.0 02:ST2-IN       326.12    2.907 No_date   28:39   14.95  n/a      .000
                        +    1.0 02:A7-STR         3.51     .108 No_date   28:29   44.03  n/a      .000
                        +    1.0 02:A7-OVF          .00     .000 No_date    0:00     .00  n/a      .000
                        +    1.0 02:ST3STR          .71     .063 No_date   28:03   33.25  n/a      .000
                        +    1.0 02:ST3OVF          .00     .000 No_date    0:00     .00  n/a      .000
                     SUM=    1.0 01:PT2ST3       330.34    3.026 No_date   28:38   15.30  n/a      .000
 R0005:C00097------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      ROUTE CHANNEL   ->    1.0 02:PT2ST3       330.34    3.026 No_date   28:38   15.30  n/a      .000
       [RDT= 1.00] out<-    1.0 01:DRAIN2       330.34    2.842 No_date   29:04   15.30  n/a      .000
          [L/S/n=  592./ .230/.043]
          {Vmax=  .607:Dmax=  .930}
 R0005:C00098------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      CONTINUOUS NASHYD     1.0 01:D2             2.28     .035 No_date   29:05   23.49 .411     .000
          [CN= 84.0: N= 3.00: Tp=  .99]
          [IaREC= 4.00: SMIN= 21.09: SMAX=140.62: SK= .010]
          [InterEventTime=  12.00]
 R0005:C00099------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      CONTINUOUS STANDHYD   1.0 01:A17           12.04    1.379 No_date   28:04   44.03 .771     .000
          [XIMP=.68:TIMP=.85]
          [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
          [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
          [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 491.:MNI=.013:SCI=   .0]
          [IaRECimp=   4.00: IaRECper=   4.00]
 R0005:C00100------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      ROUTE RESERVOIR ->    1.0 02:A17           12.04    1.379 No_date   28:04   44.03  n/a      .000
                   out <=    1.0 01:A17STR        12.04     .353 No_date   28:36   44.03  n/a      .000
              overflow <=    1.0 03:A17OVF          .00     .000 No_date    0:00     .00  n/a      .000
        {MxStoUsed=.2492E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
 R0005:C00101------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      CONTINUOUS STANDHYD   1.0 01:ST-4            .35     .038 No_date   28:00   33.25 .582     .000
          [XIMP=.46:TIMP=.57]
          [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
          [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
          [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=  84.:MNI=.013:SCI=   .0]
          [IaRECimp=   4.00: IaRECper=   4.00]
 R0005:C00102------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      ROUTE RESERVOIR ->    1.0 02:ST-4            .35     .038 No_date   28:00   33.25  n/a      .000
                   out <=    1.0 01:ST4STR          .35     .031 No_date   28:03   33.25  n/a      .000
              overflow <=    1.0 03:ST4OVF          .00     .000 No_date    0:00     .00  n/a      .000
        {MxStoUsed=.1040E-02  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
 R0005:C00103------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      CONTINUOUS STANDHYD   1.0 01:A18            5.30     .671 No_date   28:02   44.03 .771     .000
          [XIMP=.68:TIMP=.85]
          [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
          [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
          [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 326.:MNI=.013:SCI=   .0]
          [IaRECimp=   4.00: IaRECper=   4.00]
 R0005:C00104------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      ROUTE RESERVOIR ->    1.0 02:A18            5.30     .671 No_date   28:02   44.03  n/a      .000
                   out <=    1.0 01:A18STR         5.30     .160 No_date   28:31   44.03  n/a      .000
              overflow <=    1.0 03:A18OVF          .00     .000 No_date    0:00     .00  n/a      .000
        {MxStoUsed=.1108E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
 R0005:C00105------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      ADD HYD                1.0 02:DRAIN2       330.34    2.842 No_date   29:04   15.30  n/a      .000
                        +    1.0 02:D2             2.28     .035 No_date   29:05   23.49  n/a      .000
                        +    1.0 02:A17STR        12.04     .353 No_date   28:36   44.03  n/a      .000
                        +    1.0 02:A17OVF          .00     .000 No_date    0:00     .00  n/a      .000
                        +    1.0 02:ST4STR          .35     .031 No_date   28:03   33.25  n/a      .000
                        +    1.0 02:ST4OVF          .00     .000 No_date    0:00     .00  n/a      .000
                        +    1.0 02:A18STR         5.30     .160 No_date   28:31   44.03  n/a      .000
                        +    1.0 02:A18OVF          .00     .000 No_date    0:00     .00  n/a      .000
                     SUM=    1.0 01:PT3ST4       350.31    3.317 No_date   28:57   16.79  n/a      .000
 R0005:C00106------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      ROUTE CHANNEL   ->    1.0 02:PT3ST4       350.31    3.317 No_date   28:57   16.79  n/a      .000
       [RDT= 1.00] out<-    1.0 01:DRAIN3       350.31    3.191 No_date   29:19   16.79  n/a      .000
          [L/S/n=  525./ .230/.043]
          {Vmax=  .635:Dmax=  .979}
 R0005:C00107------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      CONTINUOUS NASHYD     1.0 01:D3             2.51     .055 No_date   28:45   25.92 .454     .000
          [CN= 86.0: N= 3.00: Tp=  .73]
          [IaREC= 4.00: SMIN= 17.43: SMAX=116.21: SK= .010]
          [InterEventTime=  12.00]
 R0005:C00108------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      CONTINUOUS STANDHYD   1.0 01:C1             3.41     .450 No_date   28:01   44.03 .771     .000
          [XIMP=.68:TIMP=.85]
          [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
          [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
          [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 261.:MNI=.013:SCI=   .0]
          [IaRECimp=   4.00: IaRECper=   4.00]
 R0005:C00109------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      ROUTE RESERVOIR ->    1.0 02:C1             3.41     .450 No_date   28:01   44.03  n/a      .000
                   out <=    1.0 01:C1-STR         3.41     .104 No_date   28:29   44.03  n/a      .000
              overflow <=    1.0 03:C1-OVF          .00     .000 No_date    0:00     .00  n/a      .000
        {MxStoUsed=.7123E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
 R0005:C00110------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      CONTINUOUS STANDHYD   1.0 01:ST-5            .45     .048 No_date   28:00   33.25 .582     .000
          [XIMP=.46:TIMP=.57]
          [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
          [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
          [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=  95.:MNI=.013:SCI=   .0]
          [IaRECimp=   4.00: IaRECper=   4.00]
 R0005:C00111------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      ROUTE RESERVOIR ->    1.0 02:ST-5            .45     .048 No_date   28:00   33.25  n/a      .000
                   out <=    1.0 01:ST5STR          .45     .040 No_date   28:03   33.25  n/a      .000
              overflow <=    1.0 03:ST5OVF          .00     .000 No_date    0:00     .00  n/a      .000
        {MxStoUsed=.1108E-02  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
 R0005:C00112------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      ADD HYD                1.0 02:DRAIN3       350.31    3.191 No_date   29:19   16.79  n/a      .000
                        +    1.0 02:D3             2.51     .055 No_date   28:45   25.92  n/a      .000
                        +    1.0 02:C1-STR         3.41     .104 No_date   28:29   44.03  n/a      .000
                        +    1.0 02:C1-OVF          .00     .000 No_date    0:00     .00  n/a      .000
                        +    1.0 02:ST5STR          .45     .040 No_date   28:03   33.25  n/a      .000
                        +    1.0 02:ST5OVF          .00     .000 No_date    0:00     .00  n/a      .000
                     SUM=    1.0 01:ST5-E        356.68    3.312 No_date   29:13   17.14  n/a      .000
 R0005:C00113------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      CONTINUOUS STANDHYD   1.0 01:STRAND         7.59     .640 No_date   28:12   42.86 .750     .000
          [XIMP=.64:TIMP=.85]
          [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
          [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  40.:MNP=.250:SCP=   .0]
          [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1230.:MNI=.013:SCI=   .0]
          [IaRECimp=   4.00: IaRECper=   4.00]
 R0005:C00114------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      ROUTE RESERVOIR ->    1.0 02:STRAND         7.59     .640 No_date   28:12   42.86  n/a      .000
                   out <=    1.0 01:S-POND         7.59     .048 No_date   29:55   42.86  n/a      .000
              overflow <=    1.0 03:S-OVF           .00     .000 No_date    0:00     .00  n/a      .000
        {MxStoUsed=.2288E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
 R0005:C00115------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      ADD HYD                1.0 02:ST5-E        356.68    3.312 No_date   29:13   17.14  n/a      .000
                        +    1.0 02:S-POND         7.59     .048 No_date   29:55   42.86  n/a      .000
                        +    1.0 02:S-OVF           .00     .000 No_date    0:00     .00  n/a      .000
                     SUM=    1.0 01:SSAOUT       364.27    3.358 No_date   29:13   17.68  n/a      .000
 R0005:C00116------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      SAVE HYD               1.0 01:SSAOUT       364.27    3.358 No_date   29:13   17.68  n/a      .000
          fname :SSAOUT.0005
          remark:SSAOUT
 R0005:C00117------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      CONTINUOUS STANDHYD   1.0 01:Area-A        66.75    5.433 No_date   28:11   42.06 .736     .000
          [XIMP=.64:TIMP=.80]
          [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
          [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
          [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1155.:MNI=.013:SCI=   .0]
          [IaRECimp=   4.00: IaRECper=   4.00]
 R0005:C00118------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      SAVE HYD               1.0 01:Area-A        66.75    5.433 No_date   28:11   42.06  n/a      .000
          fname :Area-A.0005
          remark:SMWF-A Inflow
 R0005:C00119------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      ROUTE RESERVOIR ->    1.0 02:Area-A        66.75    5.433 No_date   28:11   42.06  n/a      .000
                   out <=    1.0 01:SWMF-A        66.75     .298 No_date   30:20   42.06  n/a      .000
              overflow <=    1.0 03:SWMAOV          .00     .000 No_date    0:00     .00  n/a      .000
        {MxStoUsed=.2106E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
 R0005:C00120------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      SAVE HYD               1.0 01:SWMF-A        66.75     .298 No_date   30:20   42.06  n/a      .000
          fname :SWMF-A.0005
          remark:SMWF-A Outflow
 R0005:C00121------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      ADD HYD                1.0 02:SSAOUT       364.27    3.358 No_date   29:13   17.68  n/a      .000
                        +    1.0 02:SWMF-A        66.75     .298 No_date   30:20   42.06  n/a      .000
                        +    1.0 02:SWMAOV          .00     .000 No_date    0:00     .00  n/a      .000
                     SUM=    1.0 01:PT4ST5       431.02    3.613 No_date   29:19   21.45  n/a      .000
 R0005:C00122------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      CONTINUOUS STANDHYD   1.0 01:C6             1.87     .260 No_date   28:01   44.03 .771     .000
          [XIMP=.68:TIMP=.85]
          [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
          [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
          [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 193.:MNI=.013:SCI=   .0]
          [IaRECimp=   4.00: IaRECper=   4.00]
 R0005:C00123------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      ROUTE RESERVOIR ->    1.0 02:C6             1.87     .260 No_date   28:01   44.03  n/a      .000
                   out <=    1.0 01:C6-STR         1.87     .058 No_date   28:26   44.03  n/a      .000
              overflow <=    1.0 03:C6-OVF          .00     .000 No_date    0:00     .00  n/a      .000
        {MxStoUsed=.3924E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
 R0005:C00124------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      CONTINUOUS STANDHYD   1.0 01:C7             1.62     .227 No_date   28:01   44.03 .771     .000
          [XIMP=.68:TIMP=.85]
          [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
          [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
          [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 180.:MNI=.013:SCI=   .0]
          [IaRECimp=   4.00: IaRECper=   4.00]
 R0005:C00125------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      ROUTE RESERVOIR ->    1.0 02:C7             1.62     .227 No_date   28:01   44.03  n/a      .000
                   out <=    1.0 01:C7-STR         1.62     .050 No_date   28:26   44.03  n/a      .000
              overflow <=    1.0 03:C7-OVF          .00     .000 No_date    0:00     .00  n/a      .000
        {MxStoUsed=.3391E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
 R0005:C00126------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      CONTINUOUS STANDHYD   1.0 01:ST-6            .41     .044 No_date   28:00   33.25 .582     .000
          [XIMP=.46:TIMP=.57]
          [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
          [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
          [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=  91.:MNI=.013:SCI=   .0]
          [IaRECimp=   4.00: IaRECper=   4.00]
 R0005:C00127------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      ROUTE RESERVOIR ->    1.0 02:ST-6            .41     .044 No_date   28:00   33.25  n/a      .000
                   out <=    1.0 01:ST6STR          .41     .036 No_date   28:03   33.25  n/a      .000
              overflow <=    1.0 03:ST6OVF          .00     .000 No_date    0:00     .00  n/a      .000
        {MxStoUsed=.1092E-02  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
 R0005:C00128------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      ADD HYD                1.0 02:PT4ST5       431.02    3.613 No_date   29:19   21.45  n/a      .000
                        +    1.0 02:C6-STR         1.87     .058 No_date   28:26   44.03  n/a      .000
                        +    1.0 02:C6-OVF          .00     .000 No_date    0:00     .00  n/a      .000
                        +    1.0 02:C7-STR         1.62     .050 No_date   28:26   44.03  n/a      .000
                        +    1.0 02:C7-OVF          .00     .000 No_date    0:00     .00  n/a      .000
                        +    1.0 02:ST6STR          .41     .036 No_date   28:03   33.25  n/a      .000
                        +    1.0 02:ST6OVF          .00     .000 No_date    0:00     .00  n/a      .000
                     SUM=    1.0 01:PT5ST6       434.92    3.684 No_date   29:13   21.64  n/a      .000
 R0005:C00129------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      ROUTE CHANNEL   ->    1.0 02:PT5ST6       434.92    3.684 No_date   29:13   21.64  n/a      .000
       [RDT= 1.00] out<-    1.0 01:DRAIN4       434.92    3.572 No_date   29:35   21.64  n/a      .000
          [L/S/n=  324./ .100/.043]
          {Vmax=  .480:Dmax= 1.218}
 R0005:C00130------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      CONTINUOUS NASHYD     1.0 01:D4             1.73     .049 No_date   28:35   27.98 .490     .000
          [CN= 88.0: N= 3.00: Tp=  .60]
          [IaREC= 4.00: SMIN= 14.94: SMAX= 99.61: SK= .010]
          [InterEventTime=  12.00]
 R0005:C00131------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      CONTINUOUS STANDHYD   1.0 01:Area-B        24.04    2.784 No_date   28:04   40.98 .717     .000
          [XIMP=.62:TIMP=.77]
          [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
          [Pervious     area: IAper= 4.67:SLPP=1.40:LGP=  50.:MNP=.250:SCP=   .0]
          [Impervious   area: IAimp= 1.57:SLPI=1.40:LGI= 693.:MNI=.013:SCI=   .0]
          [IaRECimp=   4.00: IaRECper=   4.00]
 R0005:C00132------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      ROUTE RESERVOIR ->    1.0 02:Area-B        24.04    2.784 No_date   28:04   40.98  n/a      .000
                   out <=    1.0 01:SWMF-B        24.04     .278 No_date   28:55   40.98  n/a      .000
              overflow <=    1.0 03:SWMBOVF         .00     .000 No_date    0:00     .00  n/a      .000
        {MxStoUsed=.6277E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
 R0005:C00133------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      ADD HYD                1.0 02:DRAIN4       434.92    3.572 No_date   29:35   21.64  n/a      .000
                        +    1.0 02:D4             1.73     .049 No_date   28:35   27.98  n/a      .000
                        +    1.0 02:SWMF-B        24.04     .278 No_date   28:55   40.98  n/a      .000
                        +    1.0 02:SWMBOVF         .00     .000 No_date    0:00     .00  n/a      .000
                     SUM=    1.0 01:D4-EX        460.69    3.861 No_date   29:25   22.68  n/a      .000
 R0005:C00134------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      ROUTE CHANNEL   ->    1.0 02:D4-EX        460.69    3.861 No_date   29:25   22.68  n/a      .000
       [RDT= 1.00] out<-    1.0 01:DRAIN5       460.69    3.810 No_date   29:44   22.68  n/a      .000
          [L/S/n=  413./ .160/.033]
          {Vmax=  .561:Dmax=  .821}
 R0005:C00135------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      CONTINUOUS NASHYD     1.0 01:D5             1.90     .044 No_date   28:42   25.92 .454     .000
          [CN= 86.0: N= 3.00: Tp=  .69]
          [IaREC= 4.00: SMIN= 17.43: SMAX=116.21: SK= .010]
          [InterEventTime=  12.00]
 R0005:C00136------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      CONTINUOUS NASHYD     1.0 01:O-13SDF        9.74     .290 No_date   28:22   24.64 .431     .000
          [CN= 81.0: N= 3.00: Tp=  .43]
          [IaREC= 4.00: SMIN= 25.21: SMAX=168.09: SK= .010]
          [InterEventTime=  12.00]
 R0005:C00137------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      ROUTE RESERVOIR ->    1.0 02:O-13SDF        9.74     .290 No_date   28:22   24.64  n/a      .000
                   out <=    1.0 01:SDF            9.74     .032 No_date   32:11   24.64  n/a      .000
              overflow <=    1.0 03:OVFSDF          .00     .000 No_date    0:00     .00  n/a      .000
        {MxStoUsed=.1268E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
 R0005:C00138------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      ADD HYD                1.0 02:DRAIN5       460.69    3.810 No_date   29:44   22.68  n/a      .000
                        +    1.0 02:D5             1.90     .044 No_date   28:42   25.92  n/a      .000
                        +    1.0 02:SDF            9.74     .032 No_date   32:11   24.64  n/a      .000
                     SUM=    1.0 01:PT6MC        472.33    3.863 No_date   29:44   22.73  n/a      .000
 R0005:C00139------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      CONTINUOUS NASHYD     1.0 01:O-15          10.67     .385 No_date   28:13   23.43 .410     .000
          [CN= 82.0: N= 3.00: Tp=  .30]
          [IaREC= 4.00: SMIN= 23.09: SMAX=153.94: SK= .010]
          [InterEventTime=  12.00]
 R0005:C00140------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      ADD HYD                1.0 02:PT6MC        472.33    3.863 No_date   29:44   22.73  n/a      .000
                        +    1.0 02:O-15          10.67     .385 No_date   28:13   23.43  n/a      .000
                     SUM=    1.0 01:M-C          483.00    3.921 No_date   29:44   22.75  n/a      .000
 R0005:C00141------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      ROUTE CHANNEL   ->    1.0 02:M-C          483.00    3.921 No_date   29:44   22.75  n/a      .000
       [RDT= 1.00] out<-    1.0 01:O-14Ch       483.00    3.787 No_date   30:06   22.75  n/a      .000
          [L/S/n=  845./ .100/.033]
          {Vmax=  .748:Dmax= 1.430}
 R0005:C00142------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      CONTINUOUS NASHYD     1.0 01:O-14           5.00     .300 No_date   28:04   23.43 .410     .000
          [CN= 82.0: N= 3.00: Tp=  .13]
          [IaREC= 4.00: SMIN= 23.09: SMAX=153.94: SK= .010]
          [InterEventTime=  12.00]
 R0005:C00143------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      ADD HYD                1.0 02:O-14Ch       483.00    3.787 No_date   30:06   22.75  n/a      .000
                        +    1.0 02:O-14           5.00     .300 No_date   28:04   23.43  n/a      .000
                     SUM=    1.0 01:OKEEFE       488.00    3.807 No_date   30:06   22.75  n/a      .000
 #****************************************************************************
 #    Okeefe Pond
 #    - Rating curve obtained assuming 40m3/ha in 24 hours for quality control
 #      and a ratio of the catchment area to the West Clarke pond rating curve
 #      from the MSS for the next coordinates
 #****************************************************************************
 R0005:C00144------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      CONTINUOUS STANDHYD   1.0 01:S-1-D2        18.67    2.097 No_date   28:02   42.00 .735     .000
          [XIMP=.65:TIMP=.65]
          [LOSS= 2 :CN= 75.0]
          [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
          [Impervious   area: IAimp= 1.57:SLPI= .75:LGI= 353.:MNI=.013:SCI=   .0]
          [IaRECimp=   4.00: IaRECper=   4.00]
          [SMIN= 33.81: SMAX=225.43: SK= .010]
 R0005:C00145------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      CONTINUOUS STANDHYD   1.0 01:S-1-D3         6.79     .831 No_date   28:01   42.00 .735     .000
          [XIMP=.65:TIMP=.65]
          [LOSS= 2 :CN= 75.0]
          [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
          [Impervious   area: IAimp= 1.57:SLPI= .75:LGI= 213.:MNI=.013:SCI=   .0]
          [IaRECimp=   4.00: IaRECper=   4.00]
          [SMIN= 33.81: SMAX=225.43: SK= .010]
 R0005:C00146------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      ADD HYD                1.0 02:N_OK       53064.36   67.912 No_date   34:06   18.33  n/a      .000
                        +    1.0 02:OKEEFE       488.00    3.807 No_date   30:06   22.75  n/a      .000
                        +    1.0 02:S-1-D2        18.67    2.097 No_date   28:02   42.00  n/a      .000
                        +    1.0 02:S-1-D3         6.79     .831 No_date   28:01   42.00  n/a      .000
                     SUM=    1.0 01:SN_OK      53577.82   69.277 No_date   34:06   18.39  n/a      .000
 R0005:C00147------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      SAVE HYD               1.0 01:SN_OK      53577.82   69.277 No_date   34:06   18.39  n/a      .000
          fname :SN_OK.0005
          remark:Total Flows at Okeefe Drain
 #
 # Hydrograph from Node Okeefe routed to Node at Foster Drain
 # Channel X-Section obtained from RVCA Hydraulic Model - Station 6215
 #
 R0005:C00148------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      ROUTE CHANNEL   ->    1.0 02:SN_OK      53577.82   69.277 No_date   34:06   18.39  n/a      .000
       [RDT= 1.00] out<-    1.0 01:N_FO       53577.82   68.998 No_date   34:22   18.39  n/a      .000
          [L/S/n= 1183./ .076/.035]
          {Vmax= 1.031:Dmax= 2.621}
 #****************************************************************************
 #    Catchment FOSTER
 #    - To Foster ditch (north of the Jock)
 #    - Partially developed (medium density); remaining agricultural
 #    - 2020-12-01 JFSA Foster area is 332 as per Foster SWMF Environmental Study Report, CH2MHILL, Aug 2013.
 #    - 2020-12-01 decrease Foster drainage area from (373 HA) to (307.98 HA) after increasing Okeefe drainage area to (5
 #    - 2021-02-12  update Foster area to 325.44 ha as measured from QGIS
 #****************************************************************************
 R0005:C00149------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      CONTINUOUS STANDHYD   1.0 01:FOSTER       325.44   19.055 No_date   28:13   37.71 .660     .000
          [XIMP=.55:TIMP=.55]
          [LOSS= 2 :CN= 74.0]
          [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  40.:MNP=.250:SCP=   .0]
          [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1473.:MNI=.013:SCI=   .0]
          [IaRECimp=   4.00: IaRECper=   4.00]
          [SMIN= 36.67: SMAX=244.49: SK= .010]
 #****************************************************************************
 #    Foster Pond
 #    - Rating curve obtained assuming 40m3/ha in 24 hours for quality control
 #      and a ratio of the catchment area to the West Clarke pond rating curve
 #      from the MSS for the next coordinates
 #****************************************************************************
 R0005:C00150------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
      ROUTE RESERVOIR ->    1.0 02:FOSTER       325.44   19.055 No_date   28:13   37.71  n/a      .000
                   out <=    1.0 01:P_FOS        325.44    5.174 No_date   29:08   37.71  n/a      .000
              overflow <=    1.0 03:FO-OVF          .00     .000 No_date    0:00     .00  n/a      .000
```

```
     {MxStoUsed=.5004E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00151------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                  1.0 02:P_FOS         325.44    5.174 No_date   29:08   37.71  n/a     .000
                     +       1.0 02:FO-OVF           .00     .000 No_date    0:00     .00  n/a     .000
                  SUM=       1.0 01:FOSTER-OUT    325.44    5.174 No_date   29:08   37.71  n/a     .000
#**************************************************************************
R0005:C00152------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:W_CLAR_BRA    73.29    6.276 No_date   28:06   41.22 .722     .000
      [XIMP=.60:TIMP=.65]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 699.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0005:C00153------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:W_CLAR_BRA    73.29    6.276 No_date   28:06   41.22  n/a     .000
                out <=    1.0 01:MS_P10        73.29    1.101 No_date   28:56   41.22  n/a     .000
           overflow <=    1.0 03:P10-OVF         .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.1093E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00154------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-FO-D2      4.94     .508 No_date   28:01   37.71 .660     .000
      [XIMP=.55:TIMP=.55]
      [LOSS= 2 :CN= 74.0]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 181.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 36.67: SMAX=244.49: SK= .010]
R0005:C00155------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                  1.0 02:FOSTER-OUT    325.44    5.174 No_date   29:08   37.71  n/a     .000
                     +       1.0 02:S-1-FO-D2       4.94     .508 No_date   28:01   37.71  n/a     .000
                  SUM=       1.0 01:980           330.38    5.218 No_date   29:07   37.71  n/a     .000
R0005:C00156------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD                 1.0 01:980           330.38    5.218 No_date   29:07   37.71  n/a     .000
      fname :980.0005
      remark:Total Flows at Station 980 on Foster Drain
#
# Hydrograph from Node Foster SWM (Station 980)to Node at station 520
# Channel X-Section obtained from RVCA Hydraulic Model - Station 980
#
R0005:C00157------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:980           330.38    5.218 No_date   29:07   37.71  n/a     .000
     [RDT= 1.00] out<-    1.0 01:980-out       330.38    5.061 No_date   29:14   37.71  n/a     .000
      [L/S/n=  460./ .043/.035]
      {Vmax=  .602:Dmax= 1.269}
R0005:C00158------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-FO-D1      5.11     .605 No_date   28:00   41.68 .730     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 74.0]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 185.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 36.67: SMAX=244.49: SK= .010]
R0005:C00159------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                  1.0 02:980-out       330.38    5.061 No_date   29:14   37.71  n/a     .000
                     +       1.0 02:S-1-FO-D1       5.11     .605 No_date   28:00   41.68  n/a     .000
                  SUM=       1.0 01:520           335.49    5.103 No_date   29:14   37.77  n/a     .000
R0005:C00160------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD                 1.0 01:520           335.49    5.103 No_date   29:14   37.77  n/a     .000
      fname :520.0005
      remark:Total Flows at Sation 520 on Foster Drain
# Hydrograph from Node at Station 520 (Foster Drain) to Node at station 6016 (Jock River)
# Channel X-Section obtained from RVCA Hydraulic Model - Station 520
#
R0005:C00161------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:520           335.49    5.103 No_date   29:14   37.77  n/a     .000
     [RDT= 1.00] out<-    1.0 01:520-out       335.49    5.054 No_date   29:26   37.77  n/a     .000
      [L/S/n=  860./ .587/.035]
      {Vmax= 1.318:Dmax=  .606}
R0005:C00162------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-FO-F-D    14.96    1.615 No_date   28:02   41.68 .730     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 74.0]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 316.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 36.67: SMAX=244.49: SK= .010]
R0005:C00163------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-D8         5.27     .672 No_date   28:02   30.94 .542     .000
      [XIMP=.32:TIMP=.65]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI= .75:LGI= 187.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0005:C00164------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:S-1-A         75.88    1.479 No_date   28:37   21.69 .380     .000
      [CN= 77.0: N= 3.00: Tp=  .62]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0005:C00165------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:W_CLAR_UND    35.65     .462 No_date   29:11   21.69 .380     .000
      [CN= 77.0: N= 3.00: Tp= 1.10]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0005:C00166------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                  1.0 02:N_FO       53577.82   68.998 No_date   34:22   18.39  n/a     .000
                     +       1.0 02:520-out       335.49    5.054 No_date   29:26   37.77  n/a     .000
                     +       1.0 02:MS_P10         73.29    1.101 No_date   28:56   41.22  n/a     .000
                     +       1.0 02:P10-OVF          .00     .000 No_date    0:00     .00  n/a     .000
                     +       1.0 02:W_CLAR_UND     35.65     .462 No_date   29:11   21.69  n/a     .000
                     +       1.0 02:S-1-FO-F-D     14.96    1.615 No_date   28:02   41.68  n/a     .000
                     +       1.0 02:S-1-D8          5.27     .672 No_date   28:02   30.94  n/a     .000
                     +       1.0 02:S-1-A          75.88    1.479 No_date   28:37   21.69  n/a     .000
                  SUM=       1.0 01:SN_FO      54118.36   71.813 No_date   33:54   18.55  n/a     .000
R0005:C00167------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD                 1.0 01:SN_FO      54118.36   71.813 No_date   33:54   18.55  n/a     .000
      fname :SN_FO.0005
      remark:Total Flows at Foster Drain
# Hydrograph from Node Foster routed to Node at Cedarview Road
# Channel X-Section obtained from RVCA Hydraulic Model - Station 6016
#
R0005:C00168------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_FO      54118.36   71.813 No_date   33:54   18.55  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:N_CE       54118.36   71.742 No_date   33:55   18.55  n/a     .000
      [L/S/n=  159./ .082/.035]
      {Vmax= 1.246:Dmax= 3.101}
#**************************************************************************
#    Catchment S-1
#    - To Jock River (north and south of Jock)
#    - Primarily agricultural fields; portion of sand quarry
#**************************************************************************
R0005:C00169------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:S-1-B         55.36    1.342 No_date   28:24   21.69 .380     .000
      [CN= 77.0: N= 3.00: Tp=  .45]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
#    -  JFSA 2021-02-24 change the name from S-1-BCDC to S-1-A and S-1-B. Change their TP values based on the new areas
#    -  JFSA 2021-02-24 "S-1-BCDC-1" and "S-1-BCDC-2" are not existing anymore. "S-1-BCDC-1" is part of "S-1-FO-D2" and
#    -  JFSA 2021-01-19, after adding Greenbank pond, "S-1-BCDC-3" is not existing anymore
R0005:C00170------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-D1        21.67    2.409 No_date   28:02   42.00 .735     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .75:LGI= 380.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0005:C00171------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-D4         3.28     .421 No_date   28:00   42.00 .735     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .75:LGI= 148.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0005:C00172------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-D5        12.84    1.500 No_date   28:01   42.00 .735     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .75:LGI= 293.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0005:C00173------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-D6         1.75     .232 No_date   28:00   42.00 .735     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .75:LGI= 108.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0005:C00174------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-D7         2.03     .265 No_date   28:00   42.00 .735     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .75:LGI= 116.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
#    Catchment W_CLAR
#    - To West Clarke Drain (south of the Jock)
#    - Subdivision with 43% imp. as per Barrhaven South MSS
#    - 2020-11-30 update CLARKE Tributary Drainage Area to  = 121 ha based on P598(04)-11
#    - 2020-11-30 split CLARKE Drainage Area to MAJOR and ALL
#**************************************************************************
R0005:C00175------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:W_CLAR_MJ      1.77     .192 No_date   28:00   37.36 .654     .000
      [XIMP=.46:TIMP=.59]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 109.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
# 5-Year + 12% Capture
R0005:C00176------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:W_CLAR_MJ      1.77     .192 No_date   28:00   37.36  n/a     .000
                out <=    1.0 01:W_CLAR_MJn     1.77     .192 No_date   28:00   37.36  n/a     .000
           overflow <=    1.0 03:W_CLAR_MJj      .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.9116E-04  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00177------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:W_CLAR_ALL   119.40   10.597 No_date   28:05   41.22 .722     .000
      [XIMP=.60:TIMP=.65]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 892.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0005:C00178------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                  1.0 02:W_CLAR_ALL   119.40   10.597 No_date   28:05   41.22  n/a     .000
                     +       1.0 02:W_CLAR_MJj      .00     .000 No_date    0:00     .00  n/a     .000
                  SUM=       1.0 01:W_CLAR       119.40   10.597 No_date   28:05   41.22  n/a     .000
R0005:C00179------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD                 1.0 01:W_CLAR       119.40   10.597 No_date   28:05   41.22  n/a     .000
      fname :W_CLAR.0005
      remark:Total Flows to West Clarke
#**************************************************************************
#    West Clarke Pond 2
#    - Rating curve obtained from Barrhaven South MSS modeling
#    - Tributary Drainage Area to MSS Pond 2 = 241 ha
#**************************************************************************
R0005:C00180------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:W_CLAR       119.40   10.597 No_date   28:05   41.22  n/a     .000
                out <=    1.0 01:MS_P2        119.40    1.795 No_date   28:54   41.22  n/a     .000
           overflow <=    1.0 03:P2-OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.2665E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
#**************************************************************************
R0005:C00181------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                  1.0 02:N_CE       54118.36   71.742 No_date   33:55   18.55  n/a     .000
                     +       1.0 02:S-1-D4          3.28     .421 No_date   28:00   42.00  n/a     .000
                     +       1.0 02:S-1-D5         12.84    1.500 No_date   28:01   42.00  n/a     .000
                     +       1.0 02:MS_P2         119.40    1.795 No_date   28:54   41.22  n/a     .000
                     +       1.0 02:P2-OVF           .00     .000 No_date    0:00     .00  n/a     .000
                  SUM=       1.0 01:SN_CE      54253.88   72.490 No_date   33:54   18.61  n/a     .000
R0005:C00182------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD                 1.0 01:SN_CE      54253.88   72.490 No_date   33:54   18.61  n/a     .000
      fname :SN_CE.0005
      remark:Total Flows before Station 5737 on Jock River
# Channel X-Section obtained from RVCA Hydraulic Model - Station 5737
# 2021-02-25 add station 5737 before station 5002. Station 5737 was extracted from the HEC-RAS model T:\PROJ\1474-16\Des
# JFSA 2021-03-02  change the slope to 0.0175% instead of 0.02593 to stabilize the model
R0005:C00183------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_CE      54253.88   72.490 No_date   33:54   18.61  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:5737       54253.88   69.289 No_date   36:45   18.61  n/a     .000
      [L/S/n=  270./ .018/.035]
      {Vmax=  .686:Dmax= 4.073}
R0005:C00184------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                  1.0 02:5737       54253.88   69.289 No_date   36:45   18.61  n/a     .000
                     +       1.0 02:S-1-D1         21.67    2.409 No_date   28:02   42.00  n/a     .000
                     +       1.0 02:S-1-D6          1.75     .232 No_date   28:00   42.00  n/a     .000
                     +       1.0 02:S-1-D7          2.03     .265 No_date   28:00   42.00  n/a     .000
                  SUM=       1.0 01:5002       54279.33   69.330 No_date   36:43   18.62  n/a     .000
R0005:C00185------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD                 1.0 01:5002       54279.33   69.330 No_date   36:43   18.62  n/a     .000
      fname :5002.0005
      remark:Total Flows before Station 5002 on Jock River
# Hydrograph from Node Cedarview Road routed to Node at West Clarke Drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 5002
# JFSA 2021-02-19 Change the slope from 0.01 % (as per Stantec Report 2007) to 0.0255 % so the model will be more stable
# JFSA 2021-02-19 Change to three ROUTE CHANNEL with length 275 m each instead of one with 825 m length so the model wil
# JFSA 2021-02-26 change the length of 5002 route channel from 825 m to 736 m. That is because of adding station 5737 be
R0005:C00186------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:5002       54279.33   69.330 No_date   36:43   18.62  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N_WCa      54279.33   69.338 No_date   36:38   18.62  n/a     .000
      [L/S/n=  245./ .095/.035]
      {Vmax= 1.066:Dmax= 2.317}
R0005:C00187------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:N_WCa      54279.33   69.338 No_date   36:38   18.62  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N_WCb      54279.33   69.347 No_date   36:34   18.62  n/a     .000
      [L/S/n=  245./ .095/.035]
      {Vmax= 1.066:Dmax= 2.317}
R0005:C00188------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:N_WCb      54279.33   69.347 No_date   36:34   18.62  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N_WC       54279.33   69.562 No_date   36:09   18.62  n/a     .000
      [L/S/n=  245./ .095/.035]
      {Vmax= 1.067:Dmax= 2.317}
#**************************************************************************
# Hydrograph from Node West Clarke routed to Node at Kennedy - Burnett Drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 4534
#
R0005:C00189------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:N_WC       54279.33   69.562 No_date   36:09   18.62  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N_KB       54279.33   69.259 No_date   36:50   18.62  n/a     .000
      [L/S/n= 1020./ .050/.035]
      {Vmax=  .944:Dmax= 2.851}
#**************************************************************************
#    Catchment KEN_BU
#    - To Kennedy-Burnett SWM Facility
#    - Outlets to Fraser-Clarke drain (north of the Jock)
#    - Medium density residential subdivision
#**************************************************************************
#**************************************************************************
#   Existing Kennedy-Burnett SWM Facility
#    - Rating curve obtained from URTKBP
#    - Tributary Drainage Area to Pond = 160 ha
#**************************************************************************
R0005:C00190------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-01A        40.82    2.624 No_date   28:14   20.08 .351     .000
      [XIMP=.10:TIMP=.40]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI= .50:LGI= 522.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0005:C00191------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-01A        40.82    2.624 No_date   28:14   20.08  n/a     .000
     Major System   /     1.0 02:KB-01A-MJ       .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-01A-MN     40.82    2.624 No_date   28:14   20.08  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00192------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                  1.0 02:KB-01A-MJ       .00     .000 No_date    0:00     .00  n/a     .000
                     +       1.0 02:KB-01A-MN     40.82    2.624 No_date   28:14   20.08  n/a     .000
                  SUM=       1.0 01:KB-01A-S      40.82    2.624 No_date   28:14   20.08  n/a     .000
R0005:C00193------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-01B        31.10    1.779 No_date   28:08   22.42 .393     .000
      [XIMP=.19:TIMP=.38]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .42:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI= .42:LGI= 455.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0005:C00194------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-01B        31.10    1.779 No_date   28:08   22.42  n/a     .000
     Major System   /     1.0 02:KB-01B-MJ       .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-01B-MN     31.10    1.585 No_date   28:03   22.52  n/a     .000
      {MjSysSto=.1530E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00195------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                  1.0 02:KB-01B-MJ       .00     .000 No_date    0:00     .00  n/a     .000
                     +       1.0 02:KB-01B-MN     31.10    1.585 No_date   28:03   22.52  n/a     .000
                  SUM=       1.0 01:KB-01B-S      31.10    1.585 No_date   28:03   22.52  n/a     .000
R0005:C00196------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-01C        13.78    1.235 No_date   28:05   23.43 .410     .000
      [XIMP=.20:TIMP=.41]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI= .50:LGI= 303.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0005:C00197------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-01C        13.78    1.235 No_date   28:05   23.43  n/a     .000
     Major System   /     1.0 02:KB-01C-MJ       .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-01C-MN     13.78    1.235 No_date   28:05   23.43  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00198------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                  1.0 02:KB-01C-MJ       .00     .000 No_date    0:00     .00  n/a     .000
                     +       1.0 02:KB-01C-MN     13.78    1.235 No_date   28:05   23.43  n/a     .000
                  SUM=       1.0 01:KB-01C-S      13.78    1.235 No_date   28:05   23.43  n/a     .000
R0005:C00199------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-03         84.78    6.180 No_date   28:10   22.99 .402     .000
      [XIMP=.20:TIMP=.39]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI= .63:LGI= 752.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0005:C00200------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-03         84.78    6.180 No_date   28:10   22.99  n/a     .000
     Major System   /     1.0 02:KB-03-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-03-MN      84.78    5.270 No_date   28:03   23.12  n/a     .000
      {MjSysSto=.5145E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00201------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                  1.0 02:KB-03-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                     +       1.0 02:KB-03-MN      84.78    5.270 No_date   28:03   23.12  n/a     .000
                  SUM=       1.0 01:KB-03-S       84.78    5.270 No_date   28:03   23.12  n/a     .000
R0005:C00202------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-04          6.95    1.043 No_date   28:01   49.53 .867     .000
      [XIMP=.85:TIMP=.85]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .94:SLPI= .50:LGI= 215.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0005:C00203------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-04          6.95    1.043 No_date   28:01   49.53  n/a     .000
     Major System   /     1.0 02:KB-04-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-04-MN       6.95     .503 No_date   27:48   49.78  n/a     .000
      {MjSysSto=.3742E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00204------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                  1.0 02:KB-04-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                     +       1.0 02:KB-04-MN       6.95     .503 No_date   27:48   49.78  n/a     .000
                  SUM=       1.0 01:KB-04-S        6.95     .503 No_date   27:48   49.78  n/a     .000
R0005:C00205------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-05          5.19     .855 No_date   28:00   52.49 .919     .000
      [XIMP=.93:TIMP=.93]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 186.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0005:C00206------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-06         12.93    2.190 No_date   28:00   50.55 .885     .000
      [XIMP=.87:TIMP=.87]
```

```
        [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
        [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
        [Impervious   area: IAimp=  .94:SLPI=4.75:LGI= 294.:MNI=.013:SCI=   .0]
        [IaRECimp=   4.00: IaRECper=   4.00]
 R0005:C00207-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     COMPUTE DUALHYD       1.0 01:KB-06          12.93    2.190 No_date   28:00   50.55  n/a      .000
      Major System   /     1.0 02:KB-06-MJ         .00     .000 No_date    0:00     .00  n/a      .000
      Minor System   \     1.0 03:KB-06-MN       12.93    2.190 No_date   28:00   50.55  n/a      .000
        {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
 R0005:C00208-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:KB-06-MJ         .00     .000 No_date    0:00     .00  n/a      .000
                     +     1.0 02:KB-06-MN       12.93    2.190 No_date   28:00   50.55  n/a      .000
                  SUM=     1.0 01:KB-06-S        12.93    2.190 No_date   28:00   50.55  n/a      .000
 R0005:C00209-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:KB-11           4.03     .584 No_date   28:00   41.88 .733      .000
        [XIMP=.68:TIMP=.68]
        [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
        [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
        [Impervious   area: IAimp=  .79:SLPI=2.00:LGI= 164.:MNI=.013:SCI=   .0]
        [IaRECimp=   4.00: IaRECper=   4.00]
 R0005:C00210-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     COMPUTE DUALHYD       1.0 01:KB-11           4.03     .584 No_date   28:00   41.88  n/a      .000
      Major System   /     1.0 02:KB-11-MJ         .00     .000 No_date    0:00     .00  n/a      .000
      Minor System   \     1.0 03:KB-11-MN        4.03     .577 No_date   28:00   41.89  n/a      .000
        {MjSysSto=.4277E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
 R0005:C00211-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:KB-11-MJ         .00     .000 No_date    0:00     .00  n/a      .000
                     +     1.0 02:KB-11-MN        4.03     .577 No_date   28:00   41.89  n/a      .000
                  SUM=     1.0 01:KB-11-S         4.03     .577 No_date   28:00   41.89  n/a      .000
 R0005:C00212-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:S1              4.99     .892 No_date   28:00   52.49 .919      .000
        [XIMP=.93:TIMP=.93]
        [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
        [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
        [Impervious   area: IAimp= 1.57:SLPI=2.00:LGI= 182.:MNI=.013:SCI=   .0]
        [IaRECimp=   4.00: IaRECper=   4.00]
 R0005:C00213-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:KB-15           2.15     .321 No_date   28:00   47.49 .831      .000
        [XIMP=.79:TIMP=.79]
        [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
        [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
        [Impervious   area: IAimp=  .16:SLPI= .30:LGI= 120.:MNI=.013:SCI=   .0]
        [IaRECimp=   4.00: IaRECper=   4.00]
 R0005:C00214-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:KB-01A-S       40.82    2.624 No_date   28:14   20.08  n/a      .000
                     +     1.0 02:KB-01B-S       31.10    1.585 No_date   28:03   22.52  n/a      .000
                     +     1.0 02:KB-01C-S       13.78    1.235 No_date   28:05   23.43  n/a      .000
                     +     1.0 02:KB-03-S        84.78    5.270 No_date   28:03   23.12  n/a      .000
                     +     1.0 02:KB-04-S         6.95     .503 No_date   27:48   49.78  n/a      .000
                     +     1.0 02:KB-05           5.19     .855 No_date   28:00   52.49  n/a      .000
                     +     1.0 02:KB-06-S        12.93    2.190 No_date   28:00   50.55  n/a      .000
                     +     1.0 02:KB-11-S         4.03     .577 No_date   28:00   41.89  n/a      .000
                     +     1.0 02:KB-15           2.15     .321 No_date   28:00   47.49  n/a      .000
                     +     1.0 02:S1              4.99     .892 No_date   28:00   52.49  n/a      .000
                  SUM=     1.0 01:KB-P1         206.72   14.564 No_date   28:02   27.13  n/a      .000
 R0005:C00215-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE RESERVOIR ->    1.0 02:KB-P1         206.72   14.564 No_date   28:02   27.13  n/a      .000
                 out <=    1.0 01:KB-P1R        206.72   11.746 No_date   28:15   27.13  n/a      .000
            overflow <=    1.0 03:KB-P1ovf         .00     .000 No_date    0:00     .00  n/a      .000
      {MxStoUsed=.5868E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
 R0005:C00216-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:KB-P1R        206.72   11.746 No_date   28:15   27.13  n/a      .000
                     +     1.0 02:KB-P1ovf         .00     .000 No_date    0:00     .00  n/a      .000
                  SUM=     1.0 01:KB-Pond1      206.72   11.746 No_date   28:15   27.13  n/a      .000
 R0005:C00217-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     SAVE HYD              1.0 01:KB-Pond1      206.72   11.746 No_date   28:15   27.13  n/a      .000
        fname :KB-Pond1.0005
        remark:Total Flows at KB first pond
 R0005:C00218-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:KB-07          10.86    1.770 No_date   28:00   50.11 .877      .000
        [XIMP=.86:TIMP=.86]
        [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
        [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
        [Impervious   area: IAimp=  .79:SLPI=2.00:LGI= 269.:MNI=.013:SCI=   .0]
        [IaRECimp=   4.00: IaRECper=   4.00]
 R0005:C00219-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     COMPUTE DUALHYD       1.0 01:KB-07          10.86    1.770 No_date   28:00   50.11  n/a      .000
      Major System   /     1.0 02:KB-07-MJ         .00     .000 No_date    0:00     .00  n/a      .000
      Minor System   \     1.0 03:KB-07-MN       10.86    1.770 No_date   28:00   50.11  n/a      .000
        {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
 R0005:C00220-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:KB-07-MJ         .00     .000 No_date    0:00     .00  n/a      .000
                     +     1.0 02:KB-07-MN       10.86    1.770 No_date   28:00   50.11  n/a      .000
                  SUM=     1.0 01:KB-07-S        10.86    1.770 No_date   28:00   50.11  n/a      .000
 R0005:C00221-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:KB-08           6.61     .900 No_date   28:00   40.32 .706      .000
        [XIMP=.64:TIMP=.64]
        [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
        [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
        [Impervious   area: IAimp=  .79:SLPI=2.00:LGI= 210.:MNI=.013:SCI=   .0]
        [IaRECimp=   4.00: IaRECper=   4.00]
 R0005:C00222-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     COMPUTE DUALHYD       1.0 01:KB-08           6.61     .900 No_date   28:00   40.32  n/a      .000
      Major System   /     1.0 02:KB-08-MJ         .00     .000 No_date    0:00     .00  n/a      .000
      Minor System   \     1.0 03:KB-08-MN        6.61     .900 No_date   28:00   40.32  n/a      .000
        {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
 R0005:C00223-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:KB-08-MJ         .00     .000 No_date    0:00     .00  n/a      .000
                     +     1.0 02:KB-08-MN        6.61     .900 No_date   28:00   40.32  n/a      .000
                  SUM=     1.0 01:KB-08-S         6.61     .900 No_date   28:00   40.32  n/a      .000
 R0005:C00224-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:KB-09           2.60     .448 No_date   28:00   49.44 .865      .000
        [XIMP=.86:TIMP=.86]
        [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
        [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
        [Impervious   area: IAimp= 1.57:SLPI=2.00:LGI= 132.:MNI=.013:SCI=   .0]
        [IaRECimp=   4.00: IaRECper=   4.00]
 R0005:C00225-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:KB-10_1         2.37     .409 No_date   28:00   49.44 .865      .000
        [XIMP=.86:TIMP=.86]
        [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
        [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
        [Impervious   area: IAimp= 1.57:SLPI=2.00:LGI= 126.:MNI=.013:SCI=   .0]
        [IaRECimp=   4.00: IaRECper=   4.00]
 R0005:C00226-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:KB-10_2         1.14     .199 No_date   28:00   49.44 .865      .000
        [XIMP=.86:TIMP=.86]
        [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
        [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
        [Impervious   area: IAimp= 1.57:SLPI=2.00:LGI=  87.:MNI=.013:SCI=   .0]
        [IaRECimp=   4.00: IaRECper=   4.00]
 R0005:C00227-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:KB-12           4.86     .777 No_date   28:00   46.75 .818      .000
        [XIMP=.79:TIMP=.79]
        [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
        [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
        [Impervious   area: IAimp= 1.10:SLPI=2.00:LGI= 180.:MNI=.013:SCI=   .0]
        [IaRECimp=   4.00: IaRECper=   4.00]
 R0005:C00228-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     COMPUTE DUALHYD       1.0 01:KB-12           4.86     .777 No_date   28:00   46.75  n/a      .000
      Major System   /     1.0 02:KB-12-MJ         .00     .000 No_date    0:00     .00  n/a      .000
      Minor System   \     1.0 03:KB-12-MN        4.86     .777 No_date   28:00   46.75  n/a      .000
        {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
 R0005:C00229-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:KB-12-MJ         .00     .000 No_date    0:00     .00  n/a      .000
                     +     1.0 02:KB-12-MN        4.86     .777 No_date   28:00   46.75  n/a      .000
                  SUM=     1.0 01:KB-12-S         4.86     .777 No_date   28:00   46.75  n/a      .000
 R0005:C00230-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:KB-13          10.19    1.364 No_date   28:00   40.32 .706      .000
        [XIMP=.64:TIMP=.64]
        [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
        [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
        [Impervious   area: IAimp=  .79:SLPI=2.00:LGI= 261.:MNI=.013:SCI=   .0]
        [IaRECimp=   4.00: IaRECper=   4.00]
 R0005:C00231-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     COMPUTE DUALHYD       1.0 01:KB-13          10.19    1.364 No_date   28:00   40.32  n/a      .000
      Major System   /     1.0 02:KB-13-MJ         .00     .000 No_date    0:00     .00  n/a      .000
      Minor System   \     1.0 03:KB-13-MN       10.19    1.364 No_date   28:00   40.32  n/a      .000
        {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
 R0005:C00232-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:KB-13-MJ         .00     .000 No_date    0:00     .00  n/a      .000
                     +     1.0 02:KB-13-MN       10.19    1.364 No_date   28:00   40.32  n/a      .000
                  SUM=     1.0 01:KB-13-S        10.19    1.364 No_date   28:00   40.32  n/a      .000
 R0005:C00233-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:KB-14           5.47     .756 No_date   28:00   40.32 .706      .000
        [XIMP=.64:TIMP=.64]
        [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
        [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
        [Impervious   area: IAimp=  .79:SLPI=2.00:LGI= 191.:MNI=.013:SCI=   .0]
        [IaRECimp=   4.00: IaRECper=   4.00]
 R0005:C00234-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     COMPUTE DUALHYD       1.0 01:KB-14           5.47     .756 No_date   28:00   40.32  n/a      .000
      Major System   /     1.0 02:KB-14-MJ         .00     .000 No_date    0:00     .00  n/a      .000
      Minor System   \     1.0 03:KB-14-MN        5.47     .756 No_date   28:00   40.32  n/a      .000
        {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
 R0005:C00235-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:KB-14-MJ         .00     .000 No_date    0:00     .00  n/a      .000
                     +     1.0 02:KB-14-MN        5.47     .756 No_date   28:00   40.32  n/a      .000
                  SUM=     1.0 01:KB-14-S         5.47     .756 No_date   28:00   40.32  n/a      .000
 R0005:C00236-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:KB-16_2         3.42     .462 No_date   28:01   43.88 .768      .000
        [XIMP=.71:TIMP=.71]
        [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
        [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
        [Impervious   area: IAimp=  .16:SLPI= .30:LGI= 151.:MNI=.013:SCI=   .0]
        [IaRECimp=   4.00: IaRECper=   4.00]
 R0005:C00237-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:KB-Pond1      206.72   11.746 No_date   28:15   27.13  n/a      .000
                     +     1.0 02:KB-07-S        10.86    1.770 No_date   28:00   50.11  n/a      .000
                     +     1.0 02:KB-08-S         6.61     .900 No_date   28:00   40.32  n/a      .000
                     +     1.0 02:KB-09           2.60     .448 No_date   28:00   49.44  n/a      .000
                     +     1.0 02:KB-10_1         2.37     .409 No_date   28:00   49.43  n/a      .000
                     +     1.0 02:KB-10_2         1.14     .199 No_date   28:00   49.44  n/a      .000
                     +     1.0 02:KB-12-S         4.86     .777 No_date   28:00   46.75  n/a      .000
                     +     1.0 02:KB-13-S        10.19    1.364 No_date   28:00   40.32  n/a      .000
                     +     1.0 02:KB-14-S         5.47     .756 No_date   28:00   40.32  n/a      .000
                     +     1.0 02:KB-16_2         3.42     .462 No_date   28:01   43.88  n/a      .000
                  SUM=     1.0 01:KB-P2         254.24   16.750 No_date   28:01   30.40  n/a      .000
 R0005:C00238-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE RESERVOIR ->    1.0 02:KB-P2         254.24   16.750 No_date   28:01   30.40  n/a      .000
                 out <=    1.0 01:KB-P2R        254.24   13.525 No_date   28:14   30.40  n/a      .000
            overflow <=    1.0 03:KB-P2ovf         .00     .000 No_date    0:00     .00  n/a      .000
      {MxStoUsed=.6552E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
 R0005:C00239-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:KB-P2R        254.24   13.525 No_date   28:14   30.40  n/a      .000
                     +     1.0 02:KB-P2ovf         .00     .000 No_date    0:00     .00  n/a      .000
                  SUM=     1.0 01:KB-Pond2      254.24   13.525 No_date   28:14   30.40  n/a      .000
 R0005:C00240-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     SAVE HYD              1.0 01:KB-Pond2      254.24   13.525 No_date   28:14   30.40  n/a      .000
        fname :KB-Pond2.0005
        remark:Total Flows at KB second pond
 R0005:C00241-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:KB-16_1         2.80     .398 No_date   28:01   45.69 .800      .000
        [XIMP=.75:TIMP=.75]
        [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
        [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
        [Impervious   area: IAimp=  .16:SLPI= .30:LGI= 137.:MNI=.013:SCI=   .0]
        [IaRECimp=   4.00: IaRECper=   4.00]
 R0005:C00242-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:KB-Pond2      254.24   13.525 No_date   28:14   30.40  n/a      .000
                     +     1.0 02:KB-16_1         2.80     .398 No_date   28:01   45.69  n/a      .000
                  SUM=     1.0 01:KB-P3         257.04   13.655 No_date   28:13   30.57  n/a      .000
 R0005:C00243-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE RESERVOIR ->    1.0 02:KB-P3         257.04   13.655 No_date   28:13   30.57  n/a      .000
                 out <=    1.0 01:KB-P3R         14.18     .051 No_date   17:43   30.57  n/a      .000
            overflow <=    1.0 03:KB-P3ovf      242.86   13.603 No_date   28:13   30.57  n/a      .000
      {MxStoUsed=.1998E-02  m3, TotOvfVol=.7424E+01  m3, N-Ovf=    2, TotDurOvf=   23.hrs}
 R0005:C00244-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:KB-P3R         14.18     .051 No_date   17:43   30.57  n/a      .000
                     +     1.0 02:KB-P3ovf      242.86   13.603 No_date   28:13   30.57  n/a      .000
                  SUM=     1.0 01:KB-Pond3      257.04   13.654 No_date   28:13   30.57  n/a      .000
 R0005:C00245-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     SAVE HYD              1.0 01:KB-Pond3      257.04   13.654 No_date   28:13   30.57  n/a      .000
        fname :KB-Pond3.0005
        remark:Total Flows at KB third pond
 #****************************************************************************
 #    EXISTING / PROPOSED Subcatchments (Kennedy-Burnett SWM Facility (118080), SWM Modeling Approach, NOVATECH Report Ju
 #    - TO FRASER-CLARKE DRAIN
 #****************************************************************************
 R0005:C00246-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:FC-01           8.03     .865 No_date   28:01   32.39 .567      .000
        [XIMP=.47:TIMP=.47]
        [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
        [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
        [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 231.:MNI=.013:SCI=   .0]
        [IaRECimp=   4.00: IaRECper=   4.00]
 R0005:C00247-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     COMPUTE DUALHYD       1.0 01:FC-01           8.03     .865 No_date   28:01   32.39  n/a      .000
      Major System   /     1.0 02:FC-01-MJ         .00     .000 No_date    0:00     .00  n/a      .000
      Minor System   \     1.0 03:FC-01-MN        8.03     .756 No_date   27:58   32.40  n/a      .000
        {MjSysSto=.2912E+02, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
 R0005:C00248-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:FC-01-MJ         .00     .000 No_date    0:00     .00  n/a      .000
                     +     1.0 02:FC-01-MN        8.03     .756 No_date   27:58   32.40  n/a      .000
                  SUM=     1.0 01:FC-01-S         8.03     .756 No_date   27:58   32.40  n/a      .000
 R0005:C00249-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:FC-02          16.05    2.547 No_date   28:01   52.49 .919      .000
        [XIMP=.93:TIMP=.93]
        [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
        [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
        [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 327.:MNI=.013:SCI=   .0]
        [IaRECimp=   4.00: IaRECper=   4.00]
 R0005:C00250-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     COMPUTE DUALHYD       1.0 01:FC-02          16.05    2.547 No_date   28:01   52.49  n/a      .000
      Major System   /     1.0 02:FC-02-MJ         .00     .000 No_date    0:00     .00  n/a      .000
      Minor System   \     1.0 03:FC-02-MN       16.05    1.159 No_date   27:47   52.68  n/a      .000
        {MjSysSto=.1011E+04, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
 R0005:C00251-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:FC-02-MJ         .00     .000 No_date    0:00     .00  n/a      .000
                     +     1.0 02:FC-02-MN       16.05    1.159 No_date   27:47   52.68  n/a      .000
                  SUM=     1.0 01:FC-02-S        16.05    1.159 No_date   27:47   52.68  n/a      .000
 R0005:C00252-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:FC-03           7.37     .956 No_date   28:01   39.82 .697      .000
        [XIMP=.64:TIMP=.64]
        [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
        [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
        [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 222.:MNI=.013:SCI=   .0]
        [IaRECimp=   4.00: IaRECper=   4.00]
 R0005:C00253-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     COMPUTE DUALHYD       1.0 01:FC-03           7.37     .956 No_date   28:01   39.82  n/a      .000
      Major System   /     1.0 02:FC-03-MJ         .00     .000 No_date    0:00     .00  n/a      .000
      Minor System   \     1.0 03:FC-03-MN        7.37     .358 No_date   27:45   39.85  n/a      .000
        {MjSysSto=.4806E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
 R0005:C00254-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:FC-03-MJ         .00     .000 No_date    0:00     .00  n/a      .000
                     +     1.0 02:FC-03-MN        7.37     .358 No_date   27:45   39.85  n/a      .000
                  SUM=     1.0 01:FC-03-S         7.37     .358 No_date   27:45   39.85  n/a      .000
 R0005:C00255-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:FC-04          12.87    1.600 No_date   28:01   39.82 .697      .000
        [XIMP=.64:TIMP=.64]
        [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
        [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
        [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 293.:MNI=.013:SCI=   .0]
        [IaRECimp=   4.00: IaRECper=   4.00]
 R0005:C00256-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     COMPUTE DUALHYD       1.0 01:FC-04          12.87    1.600 No_date   28:01   39.82  n/a      .000
      Major System   /     1.0 02:FC-04-MJ         .00     .000 No_date    0:00     .00  n/a      .000
      Minor System   \     1.0 03:FC-04-MN       12.87     .741 No_date   27:48   39.85  n/a      .000
        {MjSysSto=.6277E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
 R0005:C00257-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:FC-04-MJ         .00     .000 No_date    0:00     .00  n/a      .000
                     +     1.0 02:FC-04-MN       12.87     .741 No_date   27:48   39.85  n/a      .000
                  SUM=     1.0 01:FC-04-S        12.87     .741 No_date   27:48   39.85  n/a      .000
 #****************************************************************************
 #    PROPOSED Subcatchments (Kennedy-Burnett SWM Facility (118080), SWM Modeling Approach, NOVATECH Report June, 2020)
 #    - TO JOCK RIVER
 #****************************************************************************
 R0005:C00258-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:JR-01           8.24    1.064 No_date   28:01   39.82 .697      .000
        [XIMP=.64:TIMP=.64]
        [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
        [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
        [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 234.:MNI=.013:SCI=   .0]
        [IaRECimp=   4.00: IaRECper=   4.00]
 R0005:C00259-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     COMPUTE DUALHYD       1.0 01:JR-01           8.24    1.064 No_date   28:01   39.82  n/a      .000
      Major System   /     1.0 02:JR-01-MJ         .00     .000 No_date    0:00     .00  n/a      .000
      Minor System   \     1.0 03:JR-01-MN        8.24     .563 No_date   28:29   40.05  n/a      .000
        {MjSysSto=.3052E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
 R0005:C00260-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:JR-01-MJ         .00     .000 No_date    0:00     .00  n/a      .000
                     +     1.0 02:JR-01-MN        8.24     .563 No_date   27:50   40.05  n/a      .000
                  SUM=     1.0 01:JR-01-S         8.24     .563 No_date   27:50   40.05  n/a      .000
 R0005:C00261-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:JR-02           1.59     .224 No_date   28:00   39.82 .697      .000
        [XIMP=.64:TIMP=.64]
        [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
        [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
        [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 103.:MNI=.013:SCI=   .0]
        [IaRECimp=   4.00: IaRECper=   4.00]
 R0005:C00262-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     COMPUTE DUALHYD       1.0 01:JR-02           1.59     .224 No_date   28:00   39.82  n/a      .000
      Major System   /     1.0 02:JR-02-MJ         .00     .000 No_date    0:00     .00  n/a      .000
      Minor System   \     1.0 03:JR-02-MN        1.59     .153 No_date   27:53   40.12  n/a      .000
        {MjSysSto=.2948E+02, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
 R0005:C00263-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:JR-02-MJ         .00     .000 No_date    0:00     .00  n/a      .000
                     +     1.0 02:JR-02-MN        1.59     .153 No_date   27:53   40.12  n/a      .000
                  SUM=     1.0 01:JR-02-S         1.59     .153 No_date   27:53   40.12  n/a      .000
 #****************************************************************************
 #    Catchment FRASER
 #    - To Fraser-Clarke drain (north of the Jock)
 #    - Developed land with assumed 43% imp.
 #    - 2020-12-17 Change Fraser area to be 35.1 as measured from QGIS
 #    - 2020-12-17 All Fraser is undeveloped (Nashyd)
 #****************************************************************************
 R0005:C00264-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS NASHYD     1.0 01:FRASER-DRN    13.65     .345 No_date   28:22   21.69 .380      .000
        [CN= 77.0: N= 3.00: Tp=  .43]
        [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
        [InterEventTime=  12.00]
 R0005:C00265-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:FRASER-D      21.61    2.281 No_date   28:02   40.72 .713      .000
        [XIMP=.58:TIMP=.58]
        [LOSS= 2 :CN= 80.0]
        [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
        [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 380.:MNI=.013:SCI=   .0]
        [IaRECimp=   4.00: IaRECper=   4.00]
        [SMIN= 26.32: SMAX=175.50: SK= .010]
 R0005:C00266-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     COMPUTE DUALHYD       1.0 01:FRASER-D      21.61    2.281 No_date   28:02   40.72  n/a      .000
      Major System   /     1.0 02:FRASER-J         .00     .000 No_date    0:00     .00  n/a      .000
      Minor System   \     1.0 03:FRASER-N      21.61    2.281 No_date   28:02   40.73  n/a      .000
        {MjSysSto=.2000E-01, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
 R0005:C00267-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:FRASER-J         .00     .000 No_date    0:00     .00  n/a      .000
                     +     1.0 02:FRASER-N      21.61    2.281 No_date   28:02   40.73  n/a      .000
                  SUM=     1.0 01:FRASER-S      21.61    2.281 No_date   28:02   40.73  n/a      .000
 R0005:C00268-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:KB-Pond3     257.04   13.654 No_date   28:13   30.57  n/a      .000
                     +     1.0 02:S-1-B         55.36    1.342 No_date   28:24   21.69  n/a      .000
                     +     1.0 02:FRASER-DRN    13.65     .345 No_date   28:22   21.69  n/a      .000
                     +     1.0 02:FRASER-S      21.61    2.281 No_date   28:02   40.73  n/a      .000
                     +     1.0 02:N_KB       54279.33   69.259 No_date   36:50   18.62  n/a      .000
                     +     1.0 02:FC-01-S        8.03     .756 No_date   27:58   32.40  n/a      .000
                     +     1.0 02:FC-02-S       16.05    1.159 No_date   27:47   52.68  n/a      .000
                     +     1.0 02:FC-03-S        7.37     .358 No_date   27:45   39.85  n/a      .000
                  SUM=     1.0 01:4241       54658.44   69.643 No_date   36:50   18.70  n/a      .000
 R0005:C00269-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     SAVE HYD              1.0 01:4241       54658.44   69.643 No_date   36:50   18.70  n/a      .000
        fname :4241.0005
        remark:Total Flows at Ken-Burnett Outlet
 # Hydrograph from Node Ken-Burnett to station 3633
 # Channel X-Section obtained from RVCA Hydraulic Model - Station 4241
```

```
#
R0005:C00270------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:4241       54658.44   69.643 No_date   36:50   18.70  n/a     .000
     [RDT= 1.00] out<-    1.0 01:4241-out   54658.44   69.650 No_date   36:38   18.70  n/a     .000
      [L/S/n=  294./ .109/.035]
      {Vmax= 1.095:Dmax= 1.826}
R0005:C00271------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:4241-out   54658.44   69.650 No_date   36:38   18.70  n/a     .000
                     +    1.0 02:FC-04-S       12.87     .741 No_date   27:48   39.85  n/a     .000
                     +    1.0 02:JR-01-S        8.24     .563 No_date   27:50   40.05  n/a     .000
                     +    1.0 02:JR-02-S        1.59     .153 No_date   27:53   40.12  n/a     .000
                  SUM=    1.0 01:SN_KB      54681.13   69.678 No_date   36:38   18.71  n/a     .000
R0005:C00272------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_KB      54681.13   69.678 No_date   36:38   18.71  n/a     .000
      fname :SN_KB.0005
      remark:HYD_COMMENT=["Total Flows before Station 3633]
# Hydrograph from Station 3633 to Node Todd
# Channel X-Section obtained from RVCA Hydraulic Model - Station 3633
# JFSA 2021-02-26 change the channel length (at station 3633) from 650m to 608m and change the slope from 0.0498% to 0.2
#
R0005:C00273------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_KB      54681.13   69.678 No_date   36:38   18.71  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N_TO       54681.13   69.666 No_date   36:51   18.71  n/a     .000
      [L/S/n=  608./ .247/.035]
      {Vmax= 1.446:Dmax= 1.371}
#*****************************************************************************
#    Catchment Greenbank
#    - To Greenbank Drain (south of the Jock)
#    - JFSA 2021-01-18 add Greenbank pond as per JFSA, P598(06)-15, June 2016
#    - JFSA 2021-01-19 update area from 37.479 ha to 36.6 ha based on GIS measurements
#*****************************************************************************
R0005:C00274------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:Greenbank     36.60    3.925 No_date   28:02   42.59 .745     .000
      [XIMP=.64:TIMP=.68]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 494.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0005:C00275------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:Greenbank     36.60    3.925 No_date   28:02   42.59  n/a     .000
                 out <=   1.0 01:GreenB_MN     36.60     .811 No_date   28:35   42.58  n/a     .000
            overflow <=   1.0 03:GreenB_MJ       .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.7695E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00276------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N_TO       54681.13   69.666 No_date   36:51   18.71  n/a     .000
                     +    1.0 02:GreenB_MJ       .00     .000 No_date    0:00     .00  n/a     .000
                     +    1.0 02:GreenB_MN     36.60     .811 No_date   28:35   42.58  n/a     .000
                  SUM=    1.0 01:GreenB     54717.73   69.773 No_date   36:51   18.73  n/a     .000
R0005:C00277------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:GreenB     54717.73   69.773 No_date   36:51   18.73  n/a     .000
      fname :GreenB.0005
      remark:Total Flows at Greenbank Drain
#*****************************************************************************
#    Catchment TODD
#    - To Todd Drain (south of the Jock)
#    - Subdivision with 43% imp. as per Barrhaven South MSS
#    - 2020-11-30 increase imp. based on P598(04)-11
#    - 2020-11-30 update TODD Tributary Drainage Area to  = 146.015 ha based on P598(04)-11
#    - 2020-11-30 split TODD Drainage Area to MAJOR, MINOR, POND and ALL
#*****************************************************************************
#    - JFSA 2021-01-19 add "TODD_MN1" as part of Clarke("W_CLAR_MJ") and remove it from Todd
R0005:C00278------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:TODD_MN2       2.10     .239 No_date   28:00   38.41 .672     .000
      [XIMP=.53:TIMP=.57]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 118.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0005:C00279------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:TODD_MN3        .12     .014 No_date   28:00   38.39 .672     .000
      [XIMP=.53:TIMP=.57]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI=  28.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0005:C00280------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:TODD_MJ       30.23    2.959 No_date   28:02   39.47 .691     .000
      [XIMP=.52:TIMP=.64]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 449.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0005:C00281------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:TODD_ALL     112.91    9.069 No_date   28:05   38.19 .669     .000
      [XIMP=.52:TIMP=.57]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 868.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0005:C00282------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:TODD_P         3.06     .385 No_date   28:00   41.58 .728     .000
      [XIMP=.63:TIMP=.63]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 143.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
# 5-Year + 12% Capture
R0005:C00283------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:TODD_MJ       30.23    2.959 No_date   28:02   39.47  n/a     .000
 *               out <=   1.0 01:TODD_MJn      30.23    2.959 No_date   28:02   39.47  n/a     .000
            overflow <=   1.0 03:TODD_MJj        .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.8948E-04  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
# 5-Year + 12% Capture
R0005:C00284------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:TODD_MN2       2.10     .239 No_date   28:00   38.41  n/a     .000
                 out <=   1.0 01:TODD_MN2n      2.10     .238 No_date   28:00   38.41  n/a     .000
            overflow <=   1.0 03:TODD_MN2j       .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.8965E-04  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00285------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:TODD_MN3        .12     .014 No_date   28:00   38.39  n/a     .000
                 out <=   1.0 01:TODD_MN3n       .12     .014 No_date   28:00   38.39  n/a     .000
            overflow <=   1.0 03:TODD_MN3j       .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.8651E-04  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00286------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A2            25.50    1.991 No_date   28:03   34.66 .607     .000
      [XIMP=.42:TIMP=.52]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 566.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0005:C00287------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A2            25.50    1.991 No_date   28:03   34.66  n/a     .000
     Major System   /     1.0 02:A2-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A2-MN         25.50    1.818 No_date   28:00   34.70  n/a     .000
      {MjSysSto=.5163E+02, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00288------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:TODD_MN2n      2.10     .238 No_date   28:00   38.41  n/a     .000
                     +    1.0 02:TODD_MN3n       .12     .014 No_date   28:00   38.39  n/a     .000
                     +    1.0 02:TODD_MJj        .00     .000 No_date    0:00     .00  n/a     .000
                     +    1.0 02:TODD_P         3.06     .385 No_date   28:00   41.58  n/a     .000
                     +    1.0 02:TODD_ALL     112.91    9.069 No_date   28:05   38.19  n/a     .000
                     +    1.0 02:W_CLAR_MJn     1.77     .192 No_date   28:00   37.36  n/a     .000
                  SUM=    1.0 01:TODD         119.95    9.538 No_date   28:04   38.27  n/a     .000
R0005:C00289------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:TODD         119.95    9.538 No_date   28:04   38.27  n/a     .000
      fname :TODD.0005
      remark:Total Flows at Todd Drain
#*****************************************************************************
#    Todd Pond 3
#    - Rating curve obtained from Barrhaven South MSS modeling
#    - stantec 2007, Tributary Drainage Area to MSS Pond 3 = 193 ha
#*****************************************************************************
R0005:C00290------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:TODD         119.95    9.538 No_date   28:04   38.27  n/a     .000
                 out <=   1.0 01:MS_P3        119.95    3.765 No_date   28:29   38.27  n/a     .000
            overflow <=   1.0 03:P3-OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.2351E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00291------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:GreenB     54717.73   69.773 No_date   36:51   18.73  n/a     .000
                     +    1.0 02:MS_P3        119.95    3.765 No_date   28:29   38.27  n/a     .000
                     +    1.0 02:P3-OVF          .00     .000 No_date    0:00     .00  n/a     .000
                     +    1.0 02:TODD_MN2j       .00     .000 No_date    0:00     .00  n/a     .000
                     +    1.0 02:A2-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                  SUM=    1.0 01:SN_TO      54837.69   69.979 No_date   36:50   18.77  n/a     .000
R0005:C00292------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_TO      54837.69   69.979 No_date   36:50   18.77  n/a     .000
      fname :SN_TO.0005
      remark:Total Flows at Todd Drain
#
# Hydrograph from Todd Drain routed to Corrigan Drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 2462
# 2021-02-19 Change the slope from 0.033 % (as per Stantec Report 2007) to 0.05 % so the model will be more stable and g
R0005:C00293------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_TO      54837.69   69.979 No_date   36:50   18.77  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:N_TO       54837.69   69.906 No_date   37:02   18.77  n/a     .000
      [L/S/n=  280./ .050/.045]
      {Vmax=  .826:Dmax= 2.561}
R0005:C00294------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:N_TO       54837.69   69.906 No_date   37:02   18.77  n/a     .000
      fname :N_TO.0005
      remark:Total inflows at Station 2462
#*****************************************************************************
#    Catchment CORRIG
#    - To Corrigan Drain (south of the Jock)
#    - Primarily Developed (medium density)
#    - JFSA JAN 2021, add Corrigan subcatchments as per IBI, July 2008
#*****************************************************************************
R0005:C00295------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:corr1         15.87    1.806 No_date   28:01   41.58 .728     .000
      [XIMP=.63:TIMP=.63]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 325.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0005:C00296------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:corr1         15.87    1.806 No_date   28:01   41.58  n/a     .000
     Major System   /     1.0 02:corr1-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:corr1-MN      15.87    1.806 No_date   28:01   41.58  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00297------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:corr2         12.47     .161 No_date   29:11   21.69 .380     .000
      [CN= 77.0: N= 3.00: Tp= 1.10]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0005:C00298------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A1-Corrig     15.75    1.357 No_date   28:02   34.66 .607     .000
      [XIMP=.42:TIMP=.52]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 324.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0005:C00299------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A1-Corrig     15.75    1.357 No_date   28:02   34.66  n/a     .000
     Major System   /     1.0 02:A1-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A1-MN         15.75    1.357 No_date   28:02   34.66  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00300------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:B1             2.77     .055 No_date   28:09   13.56 .237     .000
      [CN= 56.0: N= 3.00: Tp=  .23]
      [IaREC= 4.00: SMIN= 79.69: SMAX=531.24: SK= .010]
      [InterEventTime=  12.00]
R0005:C00301------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A4             1.27     .153 No_date   28:00   42.00 .735     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 253.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0005:C00302------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A4             1.27     .153 No_date   28:00   42.00  n/a     .000
     Major System   /     1.0 02:A4-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A4-MN          1.27     .153 No_date   28:00   42.00  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00303------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:A1-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                     +    1.0 02:A1-MN         15.75    1.357 No_date   28:02   34.66  n/a     .000
                     +    1.0 02:corr1-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                     +    1.0 02:corr1-MN      15.87    1.806 No_date   28:01   41.58  n/a     .000
                     +    1.0 02:corr2         12.47     .161 No_date   29:11   21.69  n/a     .000
                     +    1.0 02:B1             2.77     .055 No_date   28:09   13.56  n/a     .000
                     +    1.0 02:A4-MN          1.27     .153 No_date   28:00   42.00  n/a     .000
                  SUM=    1.0 01:MH101         48.13    3.389 No_date   28:01   32.56  n/a     .000
R0005:C00304------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH101         48.13    3.389 No_date   28:01   32.56  n/a     .000
      fname :MH101.0005
      remark:Total Flows at MH101
R0005:C00305------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH101         48.13    3.389 No_date   28:01   32.56  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:101-102       48.13    3.277 No_date   28:03   32.56  n/a     .000
      [L/S/n=  368./ .540/.013]
      {Vmax= 3.010:Dmax= 1.049}
      [Din= 1.05:Dused= 1.28}
R0005:C00306------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:A2-MN         25.50    1.818 No_date   28:00   34.70  n/a     .000
                     +    1.0 02:101-102       48.13    3.277 No_date   28:03   32.56  n/a     .000
                  SUM=    1.0 01:MH102         73.63    5.095 No_date   28:03   33.30  n/a     .000
R0005:C00307------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH102         73.63    5.095 No_date   28:03   33.30  n/a     .000
      fname :MH102.0005
      remark:Total Flows at MH102
R0005:C00308------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A5             1.60     .202 No_date   28:01   44.32 .776     .000
      [XIMP=.71:TIMP=.71]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 300.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0005:C00309------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:A4-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                     +    1.0 02:A5             1.60     .202 No_date   28:01   44.32  n/a     .000
                  SUM=    1.0 01:A5T            1.60     .202 No_date   28:01   44.32  n/a     .000
R0005:C00310------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A5T            1.60     .202 No_date   28:01   44.32  n/a     .000
     Major System   /     1.0 02:A5-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A5-MN          1.60     .202 No_date   28:01   44.32  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00311------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH102         73.63    5.095 No_date   28:03   33.30  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:102-103       73.63    4.821 No_date   28:05   33.30  n/a     .000
      [L/S/n=  504./ .280/.013]
      {Vmax= 2.606:Dmax= 1.382}
      [Din= 1.50:Dused= 1.68}
R0005:C00312------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:102-103       73.63    4.821 No_date   28:05   33.30  n/a     .000
                     +    1.0 02:A5-MN          1.60     .202 No_date   28:01   44.32  n/a     .000
                  SUM=    1.0 01:MH103         75.23    4.991 No_date   28:04   33.53  n/a     .000
R0005:C00313------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH103         75.23    4.991 No_date   28:04   33.53  n/a     .000
      fname :MH103.0005
      remark:Total Flows at MH103
R0005:C00314------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH103         75.23    4.991 No_date   28:04   33.53  n/a     .000
     [RDT= 1.00] out<-    1.0 01:103-104       75.23    4.875 No_date   28:06   33.53  n/a     .000
      [L/S/n=  438./ .460/.013]
      {Vmax= 3.219:Dmax= 1.124}
      [Din= 1.65:Dused= 1.65}
R0005:C00315------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A6             1.56     .200 No_date   28:01   44.32 .776     .000
      [XIMP=.71:TIMP=.71]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 280.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0005:C00316------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:A5-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                     +    1.0 02:A6             1.56     .200 No_date   28:01   44.32  n/a     .000
                  SUM=    1.0 01:A6T            1.56     .200 No_date   28:01   44.32  n/a     .000
R0005:C00317------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A6T            1.56     .200 No_date   28:01   44.32  n/a     .000
     Major System   /     1.0 02:A6-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A6-MN          1.56     .200 No_date   28:01   44.32  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00318------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:A6-MN          1.56     .200 No_date   28:01   44.32  n/a     .000
                     +    1.0 02:103-104       75.23    4.875 No_date   28:06   33.53  n/a     .000
                     +    1.0 02:TODD_MJn      30.23    2.959 No_date   28:02   39.47  n/a     .000
                  SUM=    1.0 01:MH104        107.02    7.823 No_date   28:04   35.37  n/a     .000
R0005:C00319------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH104        107.02    7.823 No_date   28:04   35.37  n/a     .000
      fname :MH104.0005
      remark:Total Flows at MH104
R0005:C00320------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:B2            12.31    1.023 No_date   28:02   34.82 .610     .000
      [XIMP=.41:TIMP=.54]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 417.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0005:C00321------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:B2            12.31    1.023 No_date   28:02   34.82  n/a     .000
     Major System   /     1.0 02:B2-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:B2-MN         12.31    1.023 No_date   28:02   34.82  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00322------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:B2-MN         12.31    1.023 No_date   28:02   34.82  n/a     .000
     [RDT= 1.00] out<-    1.0 01:315-333       12.31     .941 No_date   28:04   34.82  n/a     .000
      [L/S/n=  254./ .100/.013]
      {Vmax= 1.219:Dmax=  .834}
      [Din= 1.20:Dused= 1.20}
R0005:C00323------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:B3             5.59     .477 No_date   28:02   34.82 .610     .000
      [XIMP=.41:TIMP=.54]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 345.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0005:C00324------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:B3             5.59     .477 No_date   28:02   34.82  n/a     .000
     Major System   /     1.0 02:B3-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:B3-MN          5.59     .459 No_date   28:00   34.87  n/a     .000
      {MjSysSto=.3219E+01, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00325------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:B3-MN          5.59     .459 No_date   28:00   34.87  n/a     .000
                     +    1.0 02:315-333       12.31     .941 No_date   28:04   34.82  n/a     .000
                  SUM=    1.0 01:MH333         17.90    1.400 No_date   28:04   34.84  n/a     .000
R0005:C00326------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH333         17.90    1.400 No_date   28:04   34.84  n/a     .000
      fname :MH333.0005
      remark:Total Flows at MH333
R0005:C00327------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH333         17.90    1.400 No_date   28:04   34.84  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:333-335       17.90    1.320 No_date   28:06   34.84  n/a     .000
      [L/S/n=  251./ .100/.013]
      {Vmax= 1.282:Dmax= 1.033}
      [Din= 1.20:Dused= 1.26}
R0005:C00328------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:333-335       17.90    1.320 No_date   28:06   34.84  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:335-338       17.90    1.265 No_date   28:06   34.84  n/a     .000
      [L/S/n=  185./ .100/.013]
      {Vmax= 1.264:Dmax= 1.010}
```

```
      [Din= 1.20:Dused= 1.23}
R0005:C00329-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:335-338       17.90    1.265 No_date   28:06   34.84  n/a     .000
     [RDT= 1.00] out<-    1.0 01:338-340       17.90    1.183 No_date   28:06   34.84  n/a     .000
      [L/S/n=  233./ .100/.013]
      {Vmax= 1.294:Dmax=  .872}
      [Din= 1.35:Dused= 1.35}
R0005:C00330-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:B4             7.60     .638 No_date   28:02   34.82 .610     .000
      [XIMP=.41:TIMP=.54]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 388.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0005:C00331-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:B4             7.60     .638 No_date   28:02   34.82  n/a     .000
     Major System   /     1.0 02:B4-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:B4-MN          7.60     .638 No_date   28:02   34.82  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00332-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:338-340       17.90    1.183 No_date   28:06   34.84  n/a     .000
                   +      1.0 02:B4-MN          7.60     .638 No_date   28:02   34.82  n/a     .000
                SUM=      1.0 01:MH340         25.50    1.761 No_date   28:05   34.83  n/a     .000
R0005:C00333-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH340         25.50    1.761 No_date   28:05   34.83  n/a     .000
      fname :MH340.0005
      remark:Total Flows at MH340
R0005:C00334-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH340         25.50    1.761 No_date   28:05   34.83  n/a     .000
     [RDT= 1.00] out<-    1.0 01:340-104       25.50    1.698 No_date   28:06   34.83  n/a     .000
      [L/S/n=  240./ .150/.013]
      {Vmax= 1.648:Dmax=  .823}
      [Din= 1.65:Dused= 1.65}
R0005:C00335-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:340-104       25.50    1.698 No_date   28:06   34.83  n/a     .000
                   +      1.0 02:MH104        107.02    7.823 No_date   28:04   35.37  n/a     .000
                SUM=      1.0 01:MH104T       132.52    9.463 No_date   28:04   35.27  n/a     .000
R0005:C00336-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH104T       132.52    9.463 No_date   28:04   35.27  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:104-105      132.52    8.848 No_date   28:06   35.27  n/a     .000
      [L/S/n=  380./ .100/.013]
      {Vmax= 2.012:Dmax= 1.868}
      {HGTH= 2.20:WDTH= 2.52}
R0005:C00337-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:B5             2.20     .248 No_date   28:00   38.90 .681     .000
      [XIMP=.57:TIMP=.57]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 187.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0005:C00338-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:B5             2.20     .248 No_date   28:00   38.90  n/a     .000
     Major System   /     1.0 02:B5-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:B5-MN          2.20     .248 No_date   28:00   38.90  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00339-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A8              .96     .130 No_date   28:00   44.32 .776     .000
      [XIMP=.71:TIMP=.71]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 186.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0005:C00340-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:A6-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                   +      1.0 02:A8              .96     .130 No_date   28:00   44.32  n/a     .000
                SUM=      1.0 01:A8T             .96     .130 No_date   28:00   44.32  n/a     .000
R0005:C00341-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A8T             .96     .130 No_date   28:00   44.32  n/a     .000
     Major System   /     1.0 02:A8-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A8-MN           .96     .130 No_date   28:00   44.32  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00342-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:104-105      132.52    8.848 No_date   28:06   35.27  n/a     .000
                   +      1.0 02:B5-MN          2.20     .248 No_date   28:00   38.90  n/a     .000
                   +      1.0 02:A8-MN           .96     .130 No_date   28:00   44.32  n/a     .000
                   +      1.0 02:TODD_MN3j       .00     .000 No_date    0:00     .00  n/a     .000
                SUM=      1.0 01:MH105        135.68    9.064 No_date   28:05   35.39  n/a     .000
R0005:C00343-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH105        135.68    9.064 No_date   28:05   35.39  n/a     .000
      fname :MH105.0005
      remark:Total Flows at MH105
R0005:C00344-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
 *  DIVERT HYD      ->    1.0 01:A8-MJ           .00     .000 No_date    0:00     .00  n/a     .000
           diverted <=    1.0 02:A8-MJ-JR        .00     .000 No_date    0:00     .00  n/a     .000
           diverted <=    1.0 03:A8-MJ-B6        .00     .000 No_date    0:00     .00  n/a     .000
R0005:C00345-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    DIVERT HYD      ->    1.0 01:MH105        135.68    9.064 No_date   28:05   35.39  n/a     .000
           diverted <=    1.0 02:MH105-JR      25.07    6.058 No_date   28:05   35.39  n/a     .000
           diverted <=    1.0 03:MH105-B6     110.61    3.006 No_date   28:05   35.39  n/a     .000
R0005:C00346-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:B7             7.19     .661 No_date   28:01   34.82 .610     .000
      [XIMP=.41:TIMP=.54]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 211.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0005:C00347-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:B4-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                   +      1.0 02:B7             7.19     .661 No_date   28:01   34.82  n/a     .000
                SUM=      1.0 01:B7-B4MJ        7.19     .661 No_date   28:01   34.82  n/a     .000
R0005:C00348-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:B7-B4MJ        7.19     .661 No_date   28:01   34.82  n/a     .000
     Major System   /     1.0 02:B7R-MJ          .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:B7R-MN         7.19     .629 No_date   27:59   34.89  n/a     .000
      {MjSysSto=.5005E+01, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00349-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:B7R-MN         7.19     .629 No_date   27:59   34.89  n/a     .000
     [RDT= 1.00] out<-    1.0 01:360-106A       7.19     .615 No_date   28:05   34.89  n/a     .000
      [L/S/n=  167./ .100/.013]
      {Vmax= 1.089:Dmax=  .665}
      [Din= 1.05:Dused= 1.05}
R0005:C00350-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:B6             3.29     .315 No_date   28:00   34.82 .610     .000
      [XIMP=.41:TIMP=.54]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 148.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0005:C00351-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:B6             3.29     .315 No_date   28:00   34.82  n/a     .000
     Major System   /     1.0 02:B6-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:B6-MN          3.29     .064 No_date   27:39   34.87  n/a     .000
      {MjSysSto=.2841E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00352-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:EX-LAND       32.50    2.843 No_date   28:02   35.73 .626     .000
      [XIMP=.50:TIMP=.50]
      [LOSS= 2 :CN= 74.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 465.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 36.67: SMAX=244.49: SK= .010]
R0005:C00353-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:EX-LAND       32.50    2.843 No_date   28:02   35.73  n/a     .000
     Major System   /     1.0 02:EX-LAND-MJ      .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:EX-LAND-MN    32.50    2.275 No_date   27:57   35.73  n/a     .000
      {MjSysSto=.2310E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00354-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:B7R-MJ          .00     .000 No_date    0:00     .00  n/a     .000
                   +      1.0 02:EX-LAND-MJ      .00     .000 No_date    0:00     .00  n/a     .000
                   +      1.0 02:B5-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                   +      1.0 02:B6-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                   +      1.0 02:B6-MN          3.29     .064 No_date   27:39   34.87  n/a     .000
                   +      1.0 02:A8-MJ-B6        .00     .000 No_date    0:00     .00  n/a     .000
                SUM=      1.0 01:B6-B7ExMJ      3.29     .064 No_date   27:39   34.87  n/a     .000
R0005:C00355-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:B6-B7ExMJ      3.29     .064 No_date   27:39   34.87  n/a     .000
     Major System   /     1.0 02:B6R-MJ          .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:B6R-MN         3.29     .064 No_date   27:39   34.87  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00356-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH105-B6     110.61    3.006 No_date   28:05   35.39  n/a     .000
     [RDT= 1.00] out<-    1.0 01:105-106A     110.61    3.005 No_date   28:08   35.39  n/a     .000
      [L/S/n=  208./ .100/.013]
      {Vmax= 1.597:Dmax= 1.248}
      [Din= 1.80:Dused= 1.80}
R0005:C00357-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:360-106A       7.19     .615 No_date   28:05   34.89  n/a     .000
                   +      1.0 02:105-106A     110.61    3.005 No_date   28:08   35.39  n/a     .000
                   +      1.0 02:B6R-MN         3.29     .064 No_date   27:39   34.87  n/a     .000
                   +      1.0 02:B6R-MJ          .00     .000 No_date    0:00     .00  n/a     .000
                SUM=      1.0 01:MH106A       121.09    3.682 No_date   28:05   35.35  n/a     .000
R0005:C00358-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH106A       121.09    3.682 No_date   28:05   35.35  n/a     .000
      fname :MH106A.0005
      remark:Total Flows at MH106A
R0005:C00359-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH106A       121.09    3.682 No_date   28:05   35.35  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:106A-106     121.09    3.651 No_date   28:05   35.35  n/a     .000
      [L/S/n=  190./ .100/.013]
      {Vmax= 1.633:Dmax= 1.484}
      [Din= 1.80:Dused= 1.81}
R0005:C00360-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A9             2.44     .316 No_date   28:00   44.32 .776     .000
      [XIMP=.71:TIMP=.71]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 262.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0005:C00361-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A9             2.44     .316 No_date   28:00   44.32  n/a     .000
     Major System   /     1.0 02:A9-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A9-MN          2.44     .316 No_date   28:00   44.32  n/a     .000
R0005:C00362-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:106A-106     121.09    3.651 No_date   28:05   35.35  n/a     .000
                   +      1.0 02:A9-MN          2.44     .316 No_date   28:00   44.32  n/a     .000
                SUM=      1.0 01:MH106        123.53    3.896 No_date   28:03   35.52  n/a     .000
R0005:C00363-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH106        123.53    3.896 No_date   28:03   35.52  n/a     .000
      fname :MH106.0005
      remark:Total Flows at MH106
R0005:C00364-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH106        123.53    3.896 No_date   28:03   35.52  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:106-107      123.53    3.814 No_date   28:07   35.52  n/a     .000
      [L/S/n=  123./ .100/.013]
      {Vmax= 1.656:Dmax= 1.516}
      [Din= 1.80:Dused= 1.85}
R0005:C00365-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A10            4.14     .345 No_date   28:01   32.29 .565     .000
      [XIMP=.35:TIMP=.47]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 183.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0005:C00366-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A10            4.14     .345 No_date   28:01   32.29  n/a     .000
     Major System   /     1.0 02:A10-MJ          .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A10-MN         4.14     .310 No_date   27:58   32.34  n/a     .000
      {MjSysSto=.7677E+01, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00367-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A11           10.61    1.053 No_date   28:02   38.79 .679     .000
      [XIMP=.53:TIMP=.62]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 379.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0005:C00368-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A11           10.61    1.053 No_date   28:02   38.79  n/a     .000
     Major System   /     1.0 02:A11-MJ          .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A11-MN        10.61     .993 No_date   28:00   38.82  n/a     .000
      {MjSysSto=.1280E+02, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00369-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:106-107      123.53    3.814 No_date   28:07   35.52  n/a     .000
                   +      1.0 02:A10-MN         4.14     .310 No_date   27:58   32.34  n/a     .000
                   +      1.0 02:A11-MN        10.61     .993 No_date   28:00   38.82  n/a     .000
                SUM=      1.0 01:MH107        138.28    5.112 No_date   28:06   35.68  n/a     .000
R0005:C00370-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH107        138.28    5.112 No_date   28:06   35.68  n/a     .000
      fname :MH107.0005
      remark:Total Flows at MH107
R0005:C00371-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH107        138.28    5.112 No_date   28:06   35.68  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:107-119      138.28    5.061 No_date   28:07   35.68  n/a     .000
      [L/S/n=  114./ .120/.013]
      {Vmax= 1.898:Dmax= 1.622}
      [Din= 1.80:Dused= 1.98}
R0005:C00372-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:107-119      138.28    5.061 No_date   28:07   35.68  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:119-108      138.28    5.009 No_date   28:07   35.68  n/a     .000
      [L/S/n=   66./ .120/.013]
      {Vmax= 1.893:Dmax= 1.616}
      [Din= 1.80:Dused= 1.97}
R0005:C00373-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A12           12.29    1.145 No_date   28:00   34.82 .610     .000
      [XIMP=.41:TIMP=.54]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 183.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0005:C00374-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A12           12.29    1.145 No_date   28:00   34.82  n/a     .000
     Major System   /     1.0 02:A12-MJ          .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A12-MN        12.29    1.029 No_date   27:57   34.93  n/a     .000
      {MjSysSto=.2567E+02, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00375-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A13            2.59     .312 No_date   28:01   44.32 .776     .000
      [XIMP=.71:TIMP=.71]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 379.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0005:C00376-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A13            2.59     .312 No_date   28:01   44.32  n/a     .000
     Major System   /     1.0 02:A13-MJ          .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A13-MN         2.59     .312 No_date   28:01   44.32  n/a     .000
R0005:C00377-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:Pond-Block     2.94     .261 No_date   28:00   32.90 .576     .000
      [XIMP=.41:TIMP=.41]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 183.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0005:C00378-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:119-108      138.28    5.009 No_date   28:07   35.68  n/a     .000
                   +      1.0 02:A13-MN         2.59     .312 No_date   28:01   44.32  n/a     .000
                   +      1.0 02:A12-MN        12.29    1.029 No_date   27:57   34.93  n/a     .000
                SUM=      1.0 01:MH108        153.16    6.257 No_date   28:01   35.77  n/a     .000
R0005:C00379-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH108        153.16    6.257 No_date   28:01   35.77  n/a     .000
      fname :MH108.0005
      remark:Total Flows at MH108
R0005:C00380-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH108        153.16    6.257 No_date   28:01   35.77  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:108-116      153.16    6.250 No_date   28:02   35.77  n/a     .000
      [L/S/n=   77./ .130/.013]
      {Vmax= 2.057:Dmax= 1.724}
      [Din= 1.80:Dused= 2.10}
R0005:C00381-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:108-116      153.16    6.250 No_date   28:02   35.77  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:116-corrig   153.16    6.248 No_date   28:07   35.77  n/a     .000
      [L/S/n=   80./ .130/.013]
      {Vmax= 2.057:Dmax= 1.723}
      [Din= 1.80:Dused= 2.10}
R0005:C00382-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:116-corrig   153.16    6.248 No_date   28:07   35.77  n/a     .000
                   +      1.0 02:Pond-Block     2.94     .261 No_date   28:00   32.90  n/a     .000
                SUM=      1.0 01:Corrigan     156.10    6.442 No_date   28:02   35.71  n/a     .000
R0005:C00383-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:Corrigan     156.10    6.442 No_date   28:02   35.71  n/a     .000
      fname :Corrigan.0005
      remark:HYD_COMMENT=["Total Flows at Corrigan Pond]
R0005:C00384-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:Corrigan     156.10    6.442 No_date   28:02   35.71  n/a     .000
                out <=    1.0 01:Co-P         156.10    5.462 No_date   28:10   35.71  n/a     .000
           overflow <=    1.0 03:Co-P-OVF        .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.9809E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00385-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:Co-P-OVF        .00     .000 No_date    0:00     .00  n/a     .000
                   +      1.0 02:Co-P         156.10    5.462 No_date   28:10   35.71  n/a     .000
                   +      1.0 02:N_TO       54837.69   69.906 No_date   37:02   18.77  n/a     .000
                   +      1.0 02:MH105-JR      25.07    6.058 No_date   28:05   35.39  n/a     .000
                   +      1.0 02:A8-MJ-JR        .00     .000 No_date    0:00     .00  n/a     .000
                   +      1.0 02:A9-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                   +      1.0 02:A10-MJ          .00     .000 No_date    0:00     .00  n/a     .000
                   +      1.0 02:A11-MJ          .00     .000 No_date    0:00     .00  n/a     .000
                   +      1.0 02:A12-MJ          .00     .000 No_date    0:00     .00  n/a     .000
                   +      1.0 02:A13-MJ          .00     .000 No_date    0:00     .00  n/a     .000
                SUM=      1.0 01:corrig     55018.86   70.243 No_date   37:00   18.83  n/a     .000
R0005:C00386-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:corrig     55018.86   70.243 No_date   37:00   18.83  n/a     .000
      fname :corrig.0005
      remark:Total Flows at Corrigan Pond
#***************************************************************************
#    Corrigan Pond 1
#    - Rating curve obtained from Barrhaven South MSS modeling
#    - Tributary Drainage Area to MSS Pond 1 = 145 ha
#***************************************************************************
#
# Hydrograph from Corrigan Drain routed to Jockvale Road
# Channel X-Section obtained from RVCA Hydraulic Model - Station 2462
#
R0005:C00387-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:corrig     55018.86   70.243 No_date   37:00   18.83  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N_MI       55018.86   70.233 No_date   37:04   18.83  n/a     .000
      [L/S/n=  580./ .445/.045]
      {Vmax= 1.643:Dmax= 1.473}
#***************************************************************************
#    Catchment MILLS
#    - To SWM Facility north of the Jock
#    - Primarily residental development
#***************************************************************************
R0005:C00388-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:MILLS        175.99    9.992 No_date   28:07   30.98 .542     .000
      [XIMP=.38:TIMP=.38]
      [LOSS= 2 :CN= 74.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI=1118.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 36.67: SMAX=244.49: SK= .010]
#***************************************************************************
#    Chapman Mills SWM Pond
#    - Rating curve obtained from CCL hydraulic modeling
#***************************************************************************
R0005:C00389-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:MILLS        175.99    9.992 No_date   28:07   30.97  n/a     .000
                out <=    1.0 01:MILL_P       175.99    3.368 No_date   28:44   30.97  n/a     .000
           overflow <=    1.0 03:MIL-OV          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.1941E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00390-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N_MI       55018.86   70.233 No_date   37:04   18.83  n/a     .000
                   +      1.0 02:MIL-OV          .00     .000 No_date    0:00     .00  n/a     .000
                   +      1.0 02:MILL_P       175.99    3.368 No_date   28:44   30.97  n/a     .000
                SUM=      1.0 01:SN_MI      55194.85   70.602 No_date   37:03   18.87  n/a     .000
R0005:C00391-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
```

```
    SAVE HYD             1.0 01:SN_MI       55194.85   70.602 No_date   37:03   18.87  n/a     .000
      fname :SN_MI.0005
      remark:Total Flows at Jockvale Road
#
# Hydrograph from Jockvale Road routed to Heart's Desire
# Channel X-Section obtained from RVCA Hydraulic Model - Station 689
#
R0005:C00392------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_MI      55194.85   70.602 No_date   37:03   18.87  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N_DE       55194.85   70.452 No_date   37:20   18.87  n/a     .000
      [L/S/n= 1962./ .223/.045]
      {Vmax= 1.303:Dmax= 1.891}
#***************************************************************************
#    Catchment DESIRE
#    - To Jock River (north of the Jock)
#    - Rural-estate subdivision (Heart's Desire Community)
#***************************************************************************
R0005:C00393------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:DESIRE        23.78    1.359 No_date   28:03   27.22 .477     .000
      [XIMP=.25:TIMP=.25]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 400.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
#***************************************************************************
#    Catchment JOCKVA
#    - To Jockvale SWM Facility
#    - Residential development & golf course
#    - JFSA 2021-01-11 update JOCKVA after updating CORRIG as per IBI GROUP, July 2008.
#      JOCKVA area became 225.13 ha instead of 257.63 ha. JOCKVA separated into two areas JOCKVA and EX-LAND 32.5 ha as
#***************************************************************************
R0005:C00394------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:JOCKVA       225.13   14.675 No_date   28:09   35.73 .626     .000
      [XIMP=.50:TIMP=.50]
      [LOSS= 2 :CN= 74.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI=1311.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 36.67: SMAX=244.49: SK= .010]
R0005:C00395------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:EX-LAND-MN    32.50    2.275 No_date   27:57   35.73  n/a     .000
                     +    1.0 02:JOCKVA       225.13   14.675 No_date   28:09   35.73  n/a     .000
                     +    1.0 02:B2-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                     +    1.0 02:B3-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                  SUM=    1.0 01:JOCKVA-TO    257.63   16.950 No_date   28:09   35.73  n/a     .000
R0005:C00396------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:JOCKVA-TO    257.63   16.950 No_date   28:09   35.73  n/a     .000
      fname :JOCKVA-TO.0005
      remark:Total Flows at KB first pond
#***************************************************************************
#    Jockvale SWM Facility
#    - Rating curve obtained from Jockvale Servicing Study (CCL 1999)
#***************************************************************************
R0005:C00397------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:JOCKVA-TO    257.63   16.950 No_date   28:09   35.73  n/a     .000
                 out <=    1.0 01:JOCK_P       257.63    4.781 No_date   28:48   35.73  n/a     .000
            overflow <=    1.0 03:JO-OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.4115E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00398------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N_DE       55194.85   70.452 No_date   37:20   18.87  n/a     .000
                     +    1.0 02:DESIRE        23.78    1.359 No_date   28:03   27.22  n/a     .000
                     +    1.0 02:JO-OVF          .00     .000 No_date    0:00     .00  n/a     .000
                     +    1.0 02:JOCK_P       257.63    4.781 No_date   28:48   35.73  n/a     .000
                  SUM=    1.0 01:SN_DE      55476.26   71.017 No_date   37:17   18.95  n/a     .000
R0005:C00399------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_DE      55476.26   71.017 No_date   37:17   18.95  n/a     .000
      fname :SN_DE.0005
      remark:Total Flows at Heart's Desire
#
# Hydrograph from Heart's Desire routed to Rideau River
# Channel X-Section obtained from RVCA Hydraulic Model - Station 0
#
R0005:C00400------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_DE      55476.26   71.017 No_date   37:17   18.95  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N1         55476.26   71.029 No_date   37:08   18.95  n/a     .000
      [L/S/n=  563./ .967/.045]
      {Vmax= 1.676:Dmax=  .955}
#***************************************************************************
#    Catchment S-2
#    - To Jock River (north and south)
#    - Undeveloped floodplain and river
#***************************************************************************
R0005:C00401------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:S-2          102.94    2.262 No_date   28:20   19.00 .333     .000
      [CN= 72.0: N= 3.00: Tp=  .40]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
R0005:C00402------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N1         55476.26   71.029 No_date   37:08   18.95  n/a     .000
                     +    1.0 02:S-2          102.94    2.262 No_date   28:20   19.00  n/a     .000
                  SUM=    1.0 01:SN_N1      55579.20   71.168 No_date   37:08   18.95  n/a     .000
R0005:C00403------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_N1      55579.20   71.168 No_date   37:08   18.95  n/a     .000
      fname :SN_N1.0005
      remark:Total Flows at Rideau River
##############################################################################
  ** END OF RUN :    9

*****************************************************************************************************






 RUN#:COMMAND#
R0010:C00001----------------------------------------------------------------------------------------
     START
      [TZERO =    .00 hrs on        0]
      [METOUT=   2    (1=imperial, 2=metric output)]
      [NSTORM=   1 ]
      [NRUN  = 0010 ]
#***************************************************************************
#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
#***************************************************************************
#  Project Name: [Jock River]    Project Number: [1474-16]
#  Date         : 04-03-2021
#  Modeller     : [M.M.]
#  Company      : JFSAinc.
#  License #    :  2549237
#***************************************************************************
# CALIBRATION OF SUMMER MODEL PARAMETERS
# USING CONTINUOUS SIMULATIONS
# Rainfall data from JFSA raingauge installed at site + other gauges by the City
# Use data collected from May 1st to July 14, 2003
# 2020-11-30 change TMJSTO in COMPUTE DUALHYD (TMJSTO = 0.1 instead of 0.0001)
# 2020-12-01 correct pond curve values
# 2020-12-01 change W_CLAR_BRAZ XIMP to 0.55, SLPI=[0.5](%) (impervious slope), and LGI up to 700m
# 2021-02-19 Change the slope for ROUTE CHANNEL Station 2462 (NHYDout=["N_TO"] ,NHYDin=["SN_TO"]) from 0.033 % (as per S
# 2021-02-19 Change the slope for ROUTE CHANNEL Station 5002 (NHYDout=["N_WC"] ,NHYDin=["SN_CE"]) from 0.01 % (as per St
# ---------------------------------------------------------------------------
R0010:C00002----------------------------------------------------------------------------------------
     READ STORM
      Filename = storm.001
      Comment  = Pluie SCS de 24 hres 1:10 ans pour Ottawa CDA
      [SDT=10.00:SDUR=  24.00:PTOT=  64.69]
R0010:C00003----------------------------------------------------------------------------------------
     MODIFY STORM
      [RFACT=  1.00:TSHIFT= 960.00 min]
      [SDT=10.00:SDUR=  40.00:PTOT=  64.69]
R0010:C00004----------------------------------------------------------------------------------------
     DEFAULT VALUES
      Filename = T:\PROJ\1474-16\Design\20201026-QuantityControlAnalysis\SWMHYMO\SMR-Model\updated3\CitiGate.DEF
      ICASEdv  = 1 (read and print data)
      FileTitle= File comment: [Based onvarious calibration exercises in Onta
                 THE FOLLOWING PARAMETERS ARE USED IN THE DESIGN STANDHYD COM
      Horton's infiltration equation parameters:
      [Fo= 76.20 mm/hr] [Fc=13.20 mm/hr] [DCAY= 4.14 /hr] [F=  .00 mm]
      Parameters for PERVIOUS surfaces in STANDHYD:
      [IAper=   4.67 mm] [LGP=50.00 m] [MNP= .250]
      Parameters for IMPERVIOUS surfaces in STANDHYD:
      [IAimp=   1.57 mm] [CLI= 1.50]   [MNI= .013]
      Parameters used in NASHYD:
      [Ia=   4.67 mm] [N= 3.00]
      Average monthly Pan Evaporation data in    (mm)
   JAN   FEB   MAR   APR   MAY   JUN   JUL   AUG   SEP   OCT   NOV   DEC
   .00   .00   .00   .00   .00   .00   .00   .00   .00   .00   .00   .00
      Average monthly Potential Evapotranspiration in    (mm)
   JAN   FEB   MAR   APR   MAY   JUN   JUL   AUG   SEP   OCT   NOV   DEC
   .00   .00   .00   .00   .00   .00   .00   .00   .00   .00   .00   .00
R0010:C00005----------------------------------------------------------------------------------------
     COMPUTE API
      [APIini= 50.00: APIkdy= .8500: APIkdt= .9989]
      {APImax= 97.81: APIavg= 62.29: APImin= 44.87}
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.32
R0010:C00006------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:JR_HW       3680.00   11.879 No_date   36:59   20.23 .313     .000
      [CN= 64.0: N= 3.00: Tp= 7.13]
      [IaREC= 4.00: SMIN= 57.05: SMAX=380.32: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.32
R0010:C00007------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_13        971.00    4.365 No_date   32:35   18.83 .291     .000
      [CN= 61.0: N= 3.00: Tp= 3.76]
      [IaREC= 4.00: SMIN= 64.50: SMAX=430.01: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.80
R0010:C00008------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:JR_GWM      3074.00    5.829 No_date   39:59   16.22 .251     .000
      [CN= 55.0: N= 3.00: Tp=11.33]
      [IaREC= 4.00: SMIN= 83.24: SMAX=554.96: SK= .010]
      [InterEventTime=  12.00]
R0010:C00009------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:JR_ASH      1781.00   10.839 No_date   32:42   24.81 .383     .000
      [CN= 72.0: N= 3.00: Tp= 3.91]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
R0010:C00010------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_11        500.00    5.639 No_date   29:22   21.19 .328     .000
      [CN= 66.0: N= 3.00: Tp= 1.24]
      [IaREC= 4.00: SMIN= 52.62: SMAX=350.79: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.80
R0010:C00011------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:NN_CK       1917.00    7.897 No_date   34:28   21.19 .328     .000
      [CN= 66.0: N= 3.00: Tp= 5.29]
      [IaREC= 4.00: SMIN= 52.62: SMAX=350.79: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.52
R0010:C00012------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_10       5666.00   21.255 No_date   37:58   24.81 .383     .000
      [CN= 72.0: N= 3.00: Tp= 8.00]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.75
R0010:C00013------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:KG_CK       8376.00   20.398 No_date   39:59   21.19 .328     .000
      [CN= 66.0: N= 3.00: Tp=11.66]
      [IaREC= 4.00: SMIN= 52.62: SMAX=350.79: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.68
R0010:C00014------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_9        1132.00    8.921 No_date   30:54   23.73 .367     .000
      [CN= 70.0: N= 3.00: Tp= 2.51]
      [IaREC= 4.00: SMIN= 43.07: SMAX=287.10: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.82
R0010:C00015------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:NC_CK       4464.00   10.128 No_date   39:59   19.29 .298     .000
      [CN= 62.0: N= 3.00: Tp=11.32]
      [IaREC= 4.00: SMIN= 61.90: SMAX=412.66: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.80
R0010:C00016------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_8         131.00    1.689 No_date   28:57   19.76 .305     .000
      [CN= 63.0: N= 3.00: Tp=  .90]
      [IaREC= 4.00: SMIN= 59.42: SMAX=396.11: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.65
R0010:C00017------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:HB_DR       3854.00   11.811 No_date   38:37   21.19 .328     .000
      [CN= 66.0: N= 3.00: Tp= 8.42]
      [IaREC= 4.00: SMIN= 52.62: SMAX=350.79: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.82
R0010:C00018------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_7        3197.00    8.899 No_date   36:26   17.07 .264     .000
      [CN= 57.0: N= 3.00: Tp= 6.65]
      [IaREC= 4.00: SMIN= 76.32: SMAX=508.81: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.75
R0010:C00019------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_6         165.00     .818 No_date   33:04   21.69 .335     .000
      [CN= 67.0: N= 3.00: Tp= 4.18]
      [IaREC= 4.00: SMIN= 50.55: SMAX=336.97: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.67
R0010:C00020------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:VG_DR       1332.00    6.069 No_date   35:17   24.81 .383     .000
      [CN= 72.0: N= 3.00: Tp= 5.95]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
R0010:C00021------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_5         224.00    5.246 No_date   28:45   28.24 .437     .000
      [CN= 77.0: N= 3.00: Tp=  .75]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.20
R0010:C00022------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:FL_CK       4945.00   28.945 No_date   33:21   25.91 .401     .000
      [CN= 74.0: N= 3.00: Tp= 4.45]
      [IaREC= 4.00: SMIN= 36.67: SMAX=244.49: SK= .010]
      [InterEventTime=  12.00]
R0010:C00023------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_5A2        20.00     .614 No_date   28:36   31.37 .485     .000
      [CN= 81.0: N= 3.00: Tp=  .62]
      [IaREC= 4.00: SMIN= 25.21: SMAX=168.09: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.61
R0010:C00024------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_5A1      1412.00    5.817 No_date   37:54   27.06 .418     .000
      [CN= 75.0: N= 3.00: Tp= 8.00]
      [IaREC= 4.00: SMIN= 33.81: SMAX=225.43: SK= .010]
      [InterEventTime=  12.00]
R0010:C00025------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_4         585.00    8.458 No_date   29:57   31.37 .485     .000
      [CN= 81.0: N= 3.00: Tp= 1.75]
      [IaREC= 4.00: SMIN= 25.21: SMAX=168.09: SK= .010]
      [InterEventTime=  12.00]
R0010:C00026------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:LM_CK       1021.00   11.195 No_date   30:48   30.72 .475     .000
      [CN= 80.0: N= 3.00: Tp= 2.46]
      [IaREC= 4.00: SMIN= 26.32: SMAX=175.50: SK= .010]
      [InterEventTime=  12.00]
R0010:C00027------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_2         177.00    4.146 No_date   28:45   28.24 .437     .000
      [CN= 77.0: N= 3.00: Tp=  .75]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0010:C00028------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SM_DR       1122.00   10.275 No_date   31:46   31.37 .485     .000
      [CN= 81.0: N= 3.00: Tp= 3.25]
      [IaREC= 4.00: SMIN= 25.21: SMAX=168.09: SK= .010]
      [InterEventTime=  12.00]
R0010:C00029------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:MO_DR       2737.00   22.669 No_date   31:32   27.64 .427     .000
      [CN= 76.0: N= 3.00: Tp= 3.03]
      [IaREC= 4.00: SMIN= 32.46: SMAX=216.39: SK= .010]
      [InterEventTime=  12.00]
#
# Routing hydrographs
#
# Starting with the addition of Jock River Headwater and Subwatershed 13
#
R0010:C00030------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:JR_HW       3680.00   11.879 No_date   36:59   20.23  n/a     .000
                     +    1.0 02:SW_13        971.00    4.365 No_date   32:35   18.83  n/a     .000
                  SUM=    1.0 01:S_N13       4651.00   15.130 No_date   35:28   19.94  n/a     .000
#
# Sum of hydrographs from Node 13 routed to Node 13A
# (Approximated cross-section - see cross-section 258)
# Use n=0.04 for summer conditions and n=0.025 for spring conditions
#
R0010:C00031------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N13       4651.00   15.130 No_date   35:28   19.94  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N13A        4651.00   12.097 No_date   39:41   19.94  n/a     .000
      [L/S/n= 9074./ .022/.040]
      {Vmax=  .508:Dmax= 3.307}
#
# Addition of Subwatershed Jock River at Goodwood Marsh to Node 13A
#
R0010:C00032------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N13A        4651.00   12.097 No_date   39:41   19.94  n/a     .000
                     +    1.0 02:JR_GWM      3074.00    5.829 No_date   39:59   16.22  n/a     .000
                  SUM=    1.0 01:SN13A       7725.00   17.918 No_date   39:59   18.46  n/a     .000
#
# Insertion of a reservoir to simulate the effects of the Goodwood Marsh
#
R0010:C00033------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:SN13A       7725.00   17.918 No_date   39:59   18.46  n/a     .000
                out <=    1.0 01:RES_GM      7725.00    3.524 No_date   58:32   18.46  n/a     .000
     {MxStoUsed=.8503E+02  m3}
#
R0010:C00034------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:RES_GM      7725.00    3.524 No_date   58:32   18.46  n/a     .000
      fname :H_RESGM
      remark:Outflow from Res GM
# Output of Reservoir Goodwood Marsh routed from Node 13A to Node 12
# (Approximated cross-section - see cross-section 258)
# Use n=0.04 for summer conditions and n=0.025 for spring conditions
R0010:C00035------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:RES_GM      7725.00    3.524 No_date   58:32   18.46  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N12         7725.00    3.519 No_date   61:53   18.46  n/a     .000
      [L/S/n= 5926./ .076/.040]
```

```
        {Vmax=  .546:Dmax= 1.499}
#
# Addition of Subwatershed Jock River at Ashton to Node 12
#
R0010:C00036------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:N12          7725.00    3.519 No_date   61:53   18.46  n/a      .000
                     +     1.0 02:JR_ASH       1781.00   10.839 No_date   32:42   24.81  n/a      .000
                 SUM=      1.0 01:S_N12        9506.00   12.834 No_date   32:45   19.65  n/a      .000
R0010:C00037------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD               1.0 01:S_N12        9506.00   12.834 No_date   32:45   19.65  n/a      .000
      fname :H_SN12
      remark:flow at S_N12 near Ashton
#
# Sum of hydrographs from Node 12 routed to Node 11
# (Approximated cross-section - see cross-section 258)
# Use n=0.04 for summer conditions and n=0.025 for spring conditions
#
# Sum of hydrographs from Node 12 routed to Node 11 with Dummy section 248
#
R0010:C00038------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->     1.0 02:S_N12        9506.00   12.834 No_date   32:45   19.65  n/a      .000
     [RDT= 1.00] out<-     1.0 01:Dum11        9506.00   12.710 No_date   33:02   19.65  n/a      .000
      [L/S/n=  972./ .054/.040]
      {Vmax=  .680:Dmax= 2.598}
#
# Addition of Subwatershed 11 and No Name Creek to Node 11
#
R0010:C00039------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:Dum11        9506.00   12.710 No_date   33:02   19.65  n/a      .000
                     +     1.0 02:SW_11         500.00    5.639 No_date   29:22   21.19  n/a      .000
                     +     1.0 02:NN_CK        1917.00    7.897 No_date   34:28   21.19  n/a      .000
                 SUM=      1.0 01:S_N11       11923.00   21.813 No_date   33:05   19.96  n/a      .000
#
# Sum of hydrographs from Node 11 routed to Node 10
# Section 1
#
R0010:C00040------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->     1.0 02:S_N11       11923.00   21.813 No_date   33:05   19.96  n/a      .000
     [RDT= 1.00] out<-     1.0 01:N10         11923.00   14.761 No_date   39:58   19.96  n/a      .000
      [L/S/n=14028./ .157/.040]
      {Vmax=  .452:Dmax= 1.212}
#
# Addition of Subwatershed 10 to Node 10
#
R0010:C00041------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:N10         11923.00   14.761 No_date   39:58   19.96  n/a      .000
                     +     1.0 02:SW_10        5666.00   21.255 No_date   37:58   24.81  n/a      .000
                 SUM=      1.0 01:S_N10       17589.00   35.808 No_date   38:35   21.52  n/a      .000
R0010:C00042------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD               1.0 01:S_N10       17589.00   35.808 No_date   38:35   21.52  n/a      .000
      fname :H_SN10
      remark:flow at S_N10: N10 + SW_10
# Addition of Kings Creek to S_N10
#
R0010:C00043------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:S_N10       17589.00   35.808 No_date   38:35   21.52  n/a      .000
                     +     1.0 02:KG_CK        8376.00   20.398 No_date   39:59   21.19  n/a      .000
                 SUM=      1.0 01:S_N10A      25965.00   55.807 No_date   39:58   21.41  n/a      .000
#
# Sum of hydrographs from Node 10 routed to Node 9
# Section 2
#
R0010:C00044------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->     1.0 02:S_N10A      25965.00   55.807 No_date   39:58   21.41  n/a      .000
     [RDT= 1.00] out<-     1.0 01:N9          25965.00   54.076 No_date   39:59   21.41  n/a      .000
      [L/S/n= 3982./ .075/.040]
      {Vmax=  .682:Dmax= 1.695}
#
# Addition of Subwatershed 9 and Nichols Creek to Node 9
#
R0010:C00045------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:N9          25965.00   54.076 No_date   39:59   21.41  n/a      .000
                     +     1.0 02:SW_9         1132.00    8.921 No_date   30:54   23.73  n/a      .000
                     +     1.0 02:NC_CK        4464.00   10.128 No_date   39:59   19.29  n/a      .000
                 SUM=      1.0 01:S_N9        31561.00   66.284 No_date   39:59   21.20  n/a      .000
#
# Sum of hydrographs from Node 9 routed to Node 8
# Section 3
#
R0010:C00046------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->     1.0 02:S_N9        31561.00   66.284 No_date   39:59   21.20  n/a      .000
     [RDT= 1.00] out<-     1.0 01:N8          31561.00   61.483 No_date   39:57   21.20  n/a      .000
      [L/S/n= 2269./ .088/.045]
      {Vmax=  .363:Dmax= 1.619}
#
# Addition of Subwatershed 8 and Hobb's Drain to Node 8
#
R0010:C00047------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:N8          31561.00   61.483 No_date   39:57   21.20  n/a      .000
                     +     1.0 02:SW_8          131.00    1.689 No_date   28:57   19.76  n/a      .000
                     +     1.0 02:HB_DR        3854.00   11.811 No_date   38:37   21.19  n/a      .000
                 SUM=      1.0 01:S_N8        35546.00   73.344 No_date   39:57   21.19  n/a      .000
#
# Sum of hydrographs from Node 8 routed to Node 7
# Section 4
#
R0010:C00048------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->     1.0 02:S_N8        35546.00   73.344 No_date   39:57   21.19  n/a      .000
     [RDT= 1.00] out<-     1.0 01:N7          35546.00   61.416 No_date   45:01   21.19  n/a      .000
      [L/S/n= 3750./ .053/.070]
      {Vmax=  .218:Dmax= 1.987}
#
# Addition of Subwatershed 7 to Node 7
#
R0010:C00049------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:N7          35546.00   61.416 No_date   45:01   21.19  n/a      .000
                     +     1.0 02:SW_7         3197.00    8.899 No_date   36:26   17.07  n/a      .000
                 SUM=      1.0 01:S_N7        38743.00   65.819 No_date   44:06   20.85  n/a      .000
R0010:C00050------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD               1.0 01:S_N7        38743.00   65.819 No_date   44:06   20.85  n/a      .000
      fname :H_SN7
      remark:flow at S_N7: N7 + SW_7
# Insertion of a reservoir to simulate the effects of the Richmond Fen.
# Storage area and volumes were estimated from available topo maps.
# Release rate from fen was assumed to be controlled by the downstream
# river cross-section for summer conditions.  It is was assumed that for up to
# 0.75 m of water, the main channel of the river provided the storage.  Above
# this depth, the wetland starts to signigicantly store water.
#
R0010:C00051------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->     1.0 02:S_N7        38743.00   65.819 No_date   44:06   20.85  n/a      .000
                out <=     1.0 01:RES_RF      38743.00   31.796 No_date   60:32   20.85  n/a      .000
     {MxStoUsed=.2597E+03  m3}
R0010:C00052------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD               1.0 01:RES_RF      38743.00   31.796 No_date   60:32   20.85  n/a      .000
      fname :H_ResRF
      remark:outflow of Richmond Fen
#
# Sum of hydrographs from Node 7 routed to Node 6
# Section 5
#
R0010:C00053------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->     1.0 02:RES_RF      38743.00   31.796 No_date   60:32   20.85  n/a      .000
     [RDT= 1.00] out<-     1.0 01:N6          38743.00   31.737 No_date   62:00   20.85  n/a      .000
      [L/S/n= 3056./ .082/.025]
      {Vmax=  .477:Dmax=  .960}
#
# Addition of Subwatershed 6 and Van Gaal Drain to Node 6
#
R0010:C00054------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:N6          38743.00   31.737 No_date   62:00   20.85  n/a      .000
                     +     1.0 02:SW_6          165.00     .818 No_date   33:04   21.69  n/a      .000
                     +     1.0 02:VG_DR        1332.00    6.069 No_date   35:17   24.81  n/a      .000
                 SUM=      1.0 01:S_N6        40240.01   31.737 No_date   62:00   20.99  n/a      .000
#
# Sum of hydrographs from Node 6 routed to Node 5
# Section 6
#
R0010:C00055------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->     1.0 02:S_N6        40240.01   31.737 No_date   62:00   20.99  n/a      .000
     [RDT= 1.00] out<-     1.0 01:N5          40240.01   31.713 No_date   62:48   20.99  n/a      .000
      [L/S/n= 1852./ .054/.035]
      {Vmax=  .412:Dmax= 1.069}
#
# Addition of Subwatershed 5 and Flowing Creek to Node 5
#
R0010:C00056------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:N5          40240.01   31.713 No_date   62:48   20.99  n/a      .000
                     +     1.0 02:SW_5          224.00    5.246 No_date   28:45   28.24  n/a      .000
                     +     1.0 02:FL_CK        4945.00   28.945 No_date   33:21   25.91  n/a      .000
                 SUM=      1.0 01:S_N5        45409.01   51.448 No_date   34:54   21.56  n/a      .000
#
# Sum of hydrographs from Node 5 routed to Node 5A
# Section 7
#
R0010:C00057------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->     1.0 02:S_N5        45409.01   51.448 No_date   34:54   21.56  n/a      .000
     [RDT= 1.00] out<-     1.0 01:N5A         45409.01   51.312 No_date   35:12   21.56  n/a      .000
      [L/S/n=  556./ .090/.040]
      {Vmax=  .485:Dmax= 1.131}
#
# Addition of Subwatershed 5A1 and Subwatershed 5A2 to Node 5A
#
R0010:C00058------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:N5A         45409.01   51.312 No_date   35:12   21.56  n/a      .000
                     +     1.0 02:SW_5A2         20.00     .614 No_date   28:36   31.37  n/a      .000
                     +     1.0 02:SW_5A1       1412.00    5.817 No_date   37:54   27.06  n/a      .000
                 SUM=      1.0 01:S_N5A       46841.01   56.788 No_date   35:22   21.73  n/a      .000
#
# Sum of hydrographs from Node 5A routed to Node 4
# Section 8
#
R0010:C00059------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->     1.0 02:S_N5A       46841.01   56.788 No_date   35:22   21.73  n/a      .000
     [RDT= 1.00] out<-     1.0 01:N4          46841.01   54.543 No_date   36:56   21.73  n/a      .000
      [L/S/n= 4630./ .043/.035]
      {Vmax=  .793:Dmax= 3.295}
```

```
#
# Addition of Subwatershed 4 and Leamy Creek to Node 4
#
R0010:C00060------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:N4          46841.01   54.543 No_date   36:56   21.73  n/a      .000
                     +     1.0 02:SW_4          585.00    8.458 No_date   29:57   31.37  n/a      .000
                     +     1.0 02:LM_CK        1021.00   11.195 No_date   30:48   30.72  n/a      .000
                 SUM=      1.0 01:S_N4        48447.00   59.934 No_date   36:12   22.03  n/a      .000
R0010:C00061------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD               1.0 01:S_N4        48447.00   59.934 No_date   36:12   22.03  n/a      .000
      fname :S_N4.0010
      remark:flow at S_N4
#
# Sum of hydrographs from Node 4 routed to Node 2
# Section 9
#
R0010:C00062------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->     1.0 02:S_N4        48447.00   59.934 No_date   36:12   22.03  n/a      .000
     [RDT= 1.00] out<-     1.0 01:N2          48447.00   59.699 No_date   36:35   22.03  n/a      .000
      [L/S/n= 1667./ .060/.040]
      {Vmax=  .824:Dmax= 3.325}
#
# Addition of Subwatershed 2 with Monohan Drain and Smith Drain to Node 2
#
R0010:C00063------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:N2          48447.00   59.699 No_date   36:35   22.03  n/a      .000
                     +     1.0 02:SW_2          177.00    4.146 No_date   28:45   28.24  n/a      .000
                     +     1.0 02:SM_DR        1122.00   10.275 No_date   31:46   31.37  n/a      .000
                     +     1.0 02:MO_DR        2737.00   22.669 No_date   31:32   27.64  n/a      .000
                 SUM=      1.0 01:S_N2        52483.00   83.235 No_date   33:15   22.55  n/a      .000
R0010:C00064------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD               1.0 01:S_N2        52483.00   83.235 No_date   33:15   22.55  n/a      .000
      fname :H_SN2
      remark:flow at S_N2 Jock River Gauge at Moodie Dr.
#
# Sum of hydrographs from Node 2 routed to Node 1
# Section 10
#
#****************************************************************************
#
# Hydrograph from Node 2 routed to Node 416
# Channel X-Section obtained from RVCA Hydraulic Model - Station 9025
#
R0010:C00065------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->     1.0 02:S_N2        52483.00   83.235 No_date   33:15   22.55  n/a      .000
     [RDT= 1.00] out<-     1.0 01:N_416       52483.00   81.216 No_date   34:18   22.55  n/a      .000
      [L/S/n= 2327./ .050/.055]
      {Vmax=  .705:Dmax= 2.943}
#****************************************************************************
#    Catchment SW-1a
#    - Portion of RVCA catchment SW_1 outside of Reach 1 subwatershed
#    - Undeveloped agricultural land
#****************************************************************************
R0010:C00066------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD      1.0 01:SW_1a         536.42    3.888 No_date   31:17   23.57 .364      .000
      [CN= 72.0: N= 3.00: Tp= 2.79]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
R0010:C00067------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-Okeefe     44.93    5.420 No_date   28:03   48.63 .752      .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .75:LGI= 547.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0010:C00068------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:N_416       52483.00   81.216 No_date   34:18   22.55  n/a      .000
                     +     1.0 02:SW_1a         536.42    3.888 No_date   31:17   23.57  n/a      .000
                     +     1.0 02:S-1-Okeefe     44.93    5.420 No_date   28:03   48.63  n/a      .000
                 SUM=      1.0 01:SN_416      53064.36   84.144 No_date   33:41   22.58  n/a      .000
R0010:C00069------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD               1.0 01:SN_416      53064.36   84.144 No_date   33:41   22.58  n/a      .000
      fname :SN_416.0010
      remark:Total Flows at Highway 416
#
# Hydrograph from Node 416 routed to Node at Okeefe drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 7245
#
R0010:C00070------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->     1.0 02:SN_416      53064.36   84.144 No_date   33:41   22.58  n/a      .000
     [RDT= 1.00] out<-     1.0 01:N_OK        53064.36   84.064 No_date   33:41   22.58  n/a      .000
      [L/S/n=  497./ .302/.055]
      {Vmax= 1.450:Dmax= 2.495}
#****************************************************************************
#    Catchment OKEEFE
#    - To O'Keefe drain (north of the Jock)
#    - Developed with assumed 43% imp.
#    - 2020-12-01 add Okeefe model (Area 513.02 HA) instead of current Okeefe (Area 513.02 HA)
#    - 2020-11-20 Okeefe detailed model was added as per the NOVATECH SWMHYMO model (Citi-Gate 2014).
#****************************************************************************
R0010:C00071------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD      1.0 01:O-1            63.72     .684 No_date   28:58   17.24 .266      .000
      [CN= 61.0: N= 3.00: Tp=  .90]
      [IaREC= 4.00: SMIN= 64.50: SMAX=430.01: SK= .010]
      [InterEventTime=  12.00]
R0010:C00072------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->     1.0 02:O-1            63.72     .684 No_date   28:58   17.24  n/a      .000
     [RDT= 1.00] out<-     1.0 01:O-1R           63.72     .637 No_date   29:17   17.24  n/a      .000
      [L/S/n=  960./ .630/.043]
      {Vmax=  .755:Dmax=  .334}
R0010:C00073------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD      1.0 01:O-2            28.61     .242 No_date   29:13   16.01 .248      .000
      [CN= 57.0: N= 3.00: Tp= 1.10]
      [IaREC= 4.00: SMIN= 76.32: SMAX=508.81: SK= .010]
      [InterEventTime=  12.00]
R0010:C00074------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD      1.0 01:O-4            46.94     .303 No_date   29:00   12.15 .188      .000
      [CN= 49.0: N= 3.00: Tp=  .90]
      [IaREC= 4.00: SMIN=104.59: SMAX=697.25: SK= .010]
      [InterEventTime=  12.00]
R0010:C00075------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:O-1R           63.72     .637 No_date   29:17   17.24  n/a      .000
                     +     1.0 02:O-2            28.61     .242 No_date   29:13   16.01  n/a      .000
                     +     1.0 02:O-4            46.94     .303 No_date   29:00   12.15  n/a      .000
                 SUM=      1.0 01:OKF-N         139.27    1.172 No_date   29:12   15.27  n/a      .000
R0010:C00076------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->     1.0 02:OKF-N         139.27    1.172 No_date   29:12   15.27  n/a      .000
     [RDT= 1.00] out<-     1.0 01:OKF-NR        139.27    1.170 No_date   29:16   15.27  n/a      .000
      [L/S/n=  210./ .810/.043]
      {Vmax=  .916:Dmax=  .609}
R0010:C00077------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD      1.0 01:O-6            16.46     .101 No_date   28:45   10.60 .164      .000
      [CN= 43.0: N= 3.00: Tp=  .70]
      [IaREC= 4.00: SMIN=134.47: SMAX=896.47: SK= .010]
      [InterEventTime=  12.00]
R0010:C00078------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:O-3            39.67     .767 No_date   28:24   19.36 .299      .000
      [XIMP=.15:TIMP=.30]
      [LOSS= 2 :CN= 50.0]
      [Pervious     area: IAper= 4.67:SLPP= .32:LGP= 440.:MNP=.035:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .32:LGI=1880.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 99.77: SMAX=665.12: SK= .010]
R0010:C00079------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:O-5            60.63    1.881 No_date   28:10   22.00 .340      .000
      [XIMP=.13:TIMP=.26]
      [LOSS= 2 :CN= 61.0]
      [Pervious     area: IAper= 4.67:SLPP=1.38:LGP= 550.:MNP=.035:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.38:LGI=1450.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 64.50: SMAX=430.01: SK= .010]
R0010:C00080------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:OKF-NR        139.27    1.170 No_date   29:16   15.27  n/a      .000
                     +     1.0 02:O-3            39.67     .767 No_date   28:24   19.36  n/a      .000
                     +     1.0 02:O-5            60.63    1.881 No_date   28:10   22.00  n/a      .000
                     +     1.0 02:O-6            16.46     .101 No_date   28:45   10.60  n/a      .000
                 SUM=      1.0 01:PT1           256.03    3.008 No_date   28:23   17.20  n/a      .000
R0010:C00081------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD      1.0 01:O-7             5.28     .056 No_date   28:37   14.05 .217      .000
      [CN= 54.0: N= 3.00: Tp=  .60]
      [IaREC= 4.00: SMIN= 87.01: SMAX=580.07: SK= .010]
      [InterEventTime=  12.00]
R0010:C00082------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:PT1           256.03    3.008 No_date   28:23   17.20  n/a      .000
                     +     1.0 02:O-7             5.28     .056 No_date   28:37   14.05  n/a      .000
                 SUM=      1.0 01:FF            261.31    3.058 No_date   28:23   17.14  n/a      .000
R0010:C00083------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->     1.0 02:FF            261.31    3.058 No_date   28:23   17.14  n/a      .000
     [RDT= 1.00] out<-     1.0 01:DRAIN1        261.31    2.972 No_date   28:31   17.14  n/a      .000
      [L/S/n=  302./1.000/.043]
      {Vmax=  .783:Dmax=  .667}
R0010:C00084------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD      1.0 01:D1              1.17     .058 No_date   28:12   29.30 .453      .000
      [CN= 84.0: N= 3.00: Tp=  .28]
      [IaREC= 4.00: SMIN= 21.09: SMAX=140.62: SK= .010]
      [InterEventTime=  12.00]
R0010:C00085------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A1              2.50     .391 No_date   28:01   50.29 .777      .000
      [XIMP=.68:TIMP=.85]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 224.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00086------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->     1.0 02:A1              2.50     .391 No_date   28:01   50.29  n/a      .000
                out <=     1.0 01:A1-STR          2.50     .098 No_date   28:24   50.29  n/a      .000
           overflow <=     1.0 03:A1-OVF           .00     .000 No_date    0:00     .00  n/a      .000
     {MxStoUsed=.5829E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00087------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:ST-2             .59     .075 No_date   28:00   38.69 .598      .000
      [XIMP=.46:TIMP=.57]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 109.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00088------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
```

```
     ROUTE RESERVOIR ->    1.0 02:ST-2              .59      .075 No_date   28:00   38.69  n/a      .000
                out <=    1.0 01:ST2STR            .59      .052 No_date   28:05   38.69  n/a      .000
           overflow <=    1.0 03:ST2OVF            .00      .000 No_date    0:00     .00  n/a      .000
     {MxStoUsed=.1835E-02  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
 R0010:C00089------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS NASHYD     1.0 01:O-8             60.55      .857 No_date   29:04   22.40 .346      .000
       [CN= 69.0: N= 3.00: Tp= 1.00]
       [IaREC= 4.00: SMIN= 44.82: SMAX=298.82: SK= .010]
       [InterEventTime=  12.00]
 R0010:C00090------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE PIPE      ->    1.0 02:O-8             60.55      .857 No_date   29:04   22.40  n/a      .000
      [RDT= 1.00] out<-    1.0 01:O8PIPE          60.55      .852 No_date   29:08   22.40  n/a      .000
       [L/S/n=  335./ .100/.013]
       {Vmax= 1.080:Dmax=  .441}
       {HGTH= 1.20:WDTH= 1.80}
 R0010:C00091------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:DRAIN1         261.31     2.972 No_date   28:31   17.14  n/a      .000
                     +     1.0 02:D1               1.17      .058 No_date   28:12   29.30  n/a      .000
                     +     1.0 02:A1-STR           2.50      .098 No_date   28:24   50.29  n/a      .000
                     +     1.0 02:A1-OVF            .00      .000 No_date    0:00     .00  n/a      .000
                     +     1.0 02:ST2STR            .59      .052 No_date   28:05   38.69  n/a      .000
                     +     1.0 02:ST2OVF            .00      .000 No_date    0:00     .00  n/a      .000
                     +     1.0 02:O8PIPE          60.55      .852 No_date   29:08   22.40  n/a      .000
                  SUM=     1.0 01:ST2-IN         326.12     3.771 No_date   28:40   18.45  n/a      .000
 R0010:C00092------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:A7               3.51      .538 No_date   28:01   50.29 .777      .000
       [XIMP=.68:TIMP=.85]
       [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
       [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 265.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
 R0010:C00093------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE RESERVOIR ->    1.0 02:A7               3.51      .538 No_date   28:01   50.29  n/a      .000
                out <=    1.0 01:A7-STR           3.51      .139 No_date   28:25   50.29  n/a      .000
           overflow <=    1.0 03:A7-OVF            .00      .000 No_date    0:00     .00  n/a      .000
     {MxStoUsed=.8167E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
 R0010:C00094------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:ST-3              .71      .089 No_date   28:00   38.69 .598      .000
       [XIMP=.46:TIMP=.57]
       [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
       [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 119.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
 R0010:C00095------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE RESERVOIR ->    1.0 02:ST-3              .71      .089 No_date   28:00   38.69  n/a      .000
                out <=    1.0 01:ST3STR            .71      .063 No_date   28:05   38.69  n/a      .000
           overflow <=    1.0 03:ST3OVF            .00      .000 No_date    0:00     .00  n/a      .000
     {MxStoUsed=.1988E-02  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
 R0010:C00096------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:ST2-IN         326.12     3.771 No_date   28:40   18.45  n/a      .000
                     +     1.0 02:A7-STR           3.51      .139 No_date   28:25   50.29  n/a      .000
                     +     1.0 02:A7-OVF            .00      .000 No_date    0:00     .00  n/a      .000
                     +     1.0 02:ST3STR            .71      .063 No_date   28:05   38.69  n/a      .000
                     +     1.0 02:ST3OVF            .00      .000 No_date    0:00     .00  n/a      .000
                  SUM=     1.0 01:PT2ST3         330.34     3.914 No_date   28:39   18.83  n/a      .000
 R0010:C00097------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE CHANNEL   ->    1.0 02:PT2ST3         330.34     3.914 No_date   28:39   18.83  n/a      .000
      [RDT= 1.00] out<-    1.0 01:DRAIN2         330.34     3.640 No_date   29:01   18.83  n/a      .000
       [L/S/n=  592./ .230/.043]
       {Vmax=  .582:Dmax= 1.002}
 R0010:C00098------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS NASHYD     1.0 01:D2               2.28      .046 No_date   29:04   29.30 .453      .000
       [CN= 84.0: N= 3.00: Tp=  .99]
       [IaREC= 4.00: SMIN= 21.09: SMAX=140.62: SK= .010]
       [InterEventTime=  12.00]
 R0010:C00099------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:A17             12.04     1.618 No_date   28:04   50.29 .777      .000
       [XIMP=.68:TIMP=.85]
       [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
       [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 491.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
 R0010:C00100------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE RESERVOIR ->    1.0 02:A17             12.04     1.618 No_date   28:04   50.29  n/a      .000
                out <=    1.0 01:A17STR          12.04      .460 No_date   28:31   50.29  n/a      .000
           overflow <=    1.0 03:A17OVF            .00      .000 No_date    0:00     .00  n/a      .000
     {MxStoUsed=.2771E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
 R0010:C00101------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:ST-4              .35      .046 No_date   28:00   38.69 .598      .000
       [XIMP=.46:TIMP=.57]
       [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
       [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=  84.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
 R0010:C00102------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE RESERVOIR ->    1.0 02:ST-4              .35      .046 No_date   28:00   38.69  n/a      .000
                out <=    1.0 01:ST4STR            .35      .031 No_date   28:04   38.69  n/a      .000
           overflow <=    1.0 03:ST4OVF            .00      .000 No_date    0:00     .00  n/a      .000
     {MxStoUsed=.1424E-02  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
 R0010:C00103------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:A18              5.30      .780 No_date   28:02   50.29 .777      .000
       [XIMP=.68:TIMP=.85]
       [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
       [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 326.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
 R0010:C00104------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE RESERVOIR ->    1.0 02:A18              5.30      .780 No_date   28:02   50.29  n/a      .000
                out <=    1.0 01:A18STR           5.30      .206 No_date   28:27   50.29  n/a      .000
           overflow <=    1.0 03:A18OVF            .00      .000 No_date    0:00     .00  n/a      .000
     {MxStoUsed=.1232E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
 R0010:C00105------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:DRAIN2         330.34     3.640 No_date   29:01   18.83  n/a      .000
                     +     1.0 02:D2               2.28      .046 No_date   29:04   29.30  n/a      .000
                     +     1.0 02:A17STR          12.04      .460 No_date   28:31   50.29  n/a      .000
                     +     1.0 02:A17OVF            .00      .000 No_date    0:00     .00  n/a      .000
                     +     1.0 02:ST4STR            .35      .031 No_date   28:04   38.69  n/a      .000
                     +     1.0 02:ST4OVF            .00      .000 No_date    0:00     .00  n/a      .000
                     +     1.0 02:A18STR           5.30      .206 No_date   28:27   50.29  n/a      .000
                     +     1.0 02:A18OVF            .00      .000 No_date    0:00     .00  n/a      .000
                  SUM=     1.0 01:PT3ST4         350.31     4.213 No_date   28:57   20.48  n/a      .000
 R0010:C00106------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE CHANNEL   ->    1.0 02:PT3ST4         350.31     4.213 No_date   28:57   20.48  n/a      .000
      [RDT= 1.00] out<-    1.0 01:DRAIN3         350.31     4.037 No_date   29:17   20.48  n/a      .000
       [L/S/n=  525./ .230/.043]
       {Vmax=  .606:Dmax= 1.049}
 R0010:C00107------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS NASHYD     1.0 01:D3               2.51      .072 No_date   28:44   32.13 .497      .000
       [CN= 86.0: N= 3.00: Tp=  .73]
       [IaREC= 4.00: SMIN= 17.43: SMAX=116.21: SK= .010]
       [InterEventTime=  12.00]
 R0010:C00108------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:C1               3.41      .523 No_date   28:01   50.29 .777      .000
       [XIMP=.68:TIMP=.85]
       [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
       [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 261.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
 R0010:C00109------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE RESERVOIR ->    1.0 02:C1               3.41      .523 No_date   28:01   50.29  n/a      .000
                out <=    1.0 01:C1-STR           3.41      .133 No_date   28:25   50.29  n/a      .000
           overflow <=    1.0 03:C1-OVF            .00      .000 No_date    0:00     .00  n/a      .000
     {MxStoUsed=.7930E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
 R0010:C00110------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:ST-5              .45      .058 No_date   28:00   38.69 .598      .000
       [XIMP=.46:TIMP=.57]
       [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
       [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=  95.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
 R0010:C00111------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE RESERVOIR ->    1.0 02:ST-5              .45      .058 No_date   28:00   38.69  n/a      .000
                out <=    1.0 01:ST5STR            .45      .040 No_date   28:04   38.69  n/a      .000
           overflow <=    1.0 03:ST5OVF            .00      .000 No_date    0:00     .00  n/a      .000
     {MxStoUsed=.1552E-02  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
 R0010:C00112------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:DRAIN3         350.31     4.037 No_date   29:17   20.48  n/a      .000
                     +     1.0 02:D3               2.51      .072 No_date   28:44   32.13  n/a      .000
                     +     1.0 02:C1-STR           3.41      .133 No_date   28:25   50.29  n/a      .000
                     +     1.0 02:C1-OVF            .00      .000 No_date    0:00     .00  n/a      .000
                     +     1.0 02:ST5STR            .45      .040 No_date   28:04   38.69  n/a      .000
                     +     1.0 02:ST5OVF            .00      .000 No_date    0:00     .00  n/a      .000
                  SUM=     1.0 01:ST5-E          356.68     4.181 No_date   29:15   20.87  n/a      .000
 R0010:C00113------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:STRAND           7.59      .759 No_date   28:11   49.05 .758      .000
       [XIMP=.64:TIMP=.85]
       [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
       [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1230.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
 R0010:C00114------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE RESERVOIR ->    1.0 02:STRAND           7.59      .759 No_date   28:11   49.05  n/a      .000
                out <=    1.0 01:S-POND           7.59      .066 No_date   29:41   49.05  n/a      .000
           overflow <=    1.0 03:S-OVF             .00      .000 No_date    0:00     .00  n/a      .000
     {MxStoUsed=.2593E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
 R0010:C00115------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:ST5-E          356.68     4.181 No_date   29:15   20.87  n/a      .000
                     +     1.0 02:S-POND           7.59      .066 No_date   29:41   49.05  n/a      .000
                     +     1.0 02:S-OVF             .00      .000 No_date    0:00     .00  n/a      .000
                  SUM=     1.0 01:SSAOUT         364.27     4.242 No_date   29:15   21.45  n/a      .000
 R0010:C00116------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     SAVE HYD              1.0 01:SSAOUT         364.27     4.242 No_date   29:15   21.45  n/a      .000
       fname :SSAOUT.0010
       remark:SSAOUT
 R0010:C00117------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:Area-A          66.75     6.470 No_date   28:10   48.24 .746      .000
       [XIMP=.64:TIMP=.80]
       [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
       [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1155.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
 R0010:C00118------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     SAVE HYD              1.0 01:Area-A          66.75     6.470 No_date   28:10   48.24  n/a      .000
       fname :Area-A.0010
       remark:SMWF-A Inflow
 R0010:C00119------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE RESERVOIR ->    1.0 02:Area-A          66.75     6.470 No_date   28:10   48.24  n/a      .000
                out <=    1.0 01:SWMF-A          66.75      .465 No_date   29:54   48.24  n/a      .000
           overflow <=    1.0 03:SWMAOV            .00      .000 No_date    0:00     .00  n/a      .000
     {MxStoUsed=.2359E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
 R0010:C00120------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     SAVE HYD              1.0 01:SWMF-A          66.75      .465 No_date   29:54   48.24  n/a      .000
       fname :SWMF-A.0010
       remark:SMWF-A Outflow
 R0010:C00121------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:SSAOUT         364.27     4.242 No_date   29:15   21.45  n/a      .000
                     +     1.0 02:SWMF-A          66.75      .465 No_date   29:54   48.24  n/a      .000
                     +     1.0 02:SWMAOV            .00      .000 No_date    0:00     .00  n/a      .000
                  SUM=     1.0 01:PT4ST5         431.02     4.657 No_date   29:18   25.60  n/a      .000
 R0010:C00122------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:C6               1.87      .301 No_date   28:01   50.29 .777      .000
       [XIMP=.68:TIMP=.85]
       [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
       [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 193.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
 R0010:C00123------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE RESERVOIR ->    1.0 02:C6               1.87      .301 No_date   28:01   50.29  n/a      .000
                out <=    1.0 01:C6-STR           1.87      .074 No_date   28:22   50.29  n/a      .000
           overflow <=    1.0 03:C6-OVF            .00      .000 No_date    0:00     .00  n/a      .000
     {MxStoUsed=.4376E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
 R0010:C00124------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:C7               1.62      .262 No_date   28:01   50.29 .777      .000
       [XIMP=.68:TIMP=.85]
       [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
       [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 180.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
 R0010:C00125------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE RESERVOIR ->    1.0 02:C7               1.62      .262 No_date   28:01   50.29  n/a      .000
                out <=    1.0 01:C7-STR           1.62      .064 No_date   28:22   50.29  n/a      .000
           overflow <=    1.0 03:C7-OVF            .00      .000 No_date    0:00     .00  n/a      .000
     {MxStoUsed=.3781E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
 R0010:C00126------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:ST-6              .41      .053 No_date   28:00   38.69 .598      .000
       [XIMP=.46:TIMP=.57]
       [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
       [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=  91.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
 R0010:C00127------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE RESERVOIR ->    1.0 02:ST-6              .41      .053 No_date   28:00   38.69  n/a      .000
                out <=    1.0 01:ST6STR            .41      .036 No_date   28:04   38.69  n/a      .000
           overflow <=    1.0 03:ST6OVF            .00      .000 No_date    0:00     .00  n/a      .000
     {MxStoUsed=.1514E-02  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
 R0010:C00128------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:PT4ST5         431.02     4.657 No_date   29:18   25.60  n/a      .000
                     +     1.0 02:C6-STR           1.87      .074 No_date   28:22   50.29  n/a      .000
                     +     1.0 02:C6-OVF            .00      .000 No_date    0:00     .00  n/a      .000
                     +     1.0 02:C7-STR           1.62      .064 No_date   28:22   50.29  n/a      .000
                     +     1.0 02:C7-OVF            .00      .000 No_date    0:00     .00  n/a      .000
                     +     1.0 02:ST6STR            .41      .036 No_date   28:04   38.69  n/a      .000
                     +     1.0 02:ST6OVF            .00      .000 No_date    0:00     .00  n/a      .000
                  SUM=     1.0 01:PT5ST6         434.92     4.740 No_date   29:18   25.81  n/a      .000
 R0010:C00129------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE CHANNEL   ->    1.0 02:PT5ST6         434.92     4.740 No_date   29:18   25.81  n/a      .000
      [RDT= 1.00] out<-    1.0 01:DRAIN4         434.92     4.599 No_date   29:31   25.81  n/a      .000
       [L/S/n=  324./ .100/.043]
       {Vmax=  .468:Dmax= 1.312}
 R0010:C00130------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS NASHYD     1.0 01:D4               1.73      .063 No_date   28:35   34.48 .533      .000
       [CN= 88.0: N= 3.00: Tp=  .60]
       [IaREC= 4.00: SMIN= 14.94: SMAX= 99.61: SK= .010]
       [InterEventTime=  12.00]
 R0010:C00131------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:Area-B          24.04     3.287 No_date   28:03   47.09 .728      .000
       [XIMP=.62:TIMP=.77]
       [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
       [Pervious     area: IAper= 4.67:SLPP=1.40:LGP=  50.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI=1.40:LGI= 693.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
 R0010:C00132------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE RESERVOIR ->    1.0 02:Area-B          24.04     3.287 No_date   28:03   47.09  n/a      .000
                out <=    1.0 01:SWMF-B          24.04      .356 No_date   28:50   47.09  n/a      .000
           overflow <=    1.0 03:SWMBOVF           .00      .000 No_date    0:00     .00  n/a      .000
     {MxStoUsed=.7142E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
 R0010:C00133------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:DRAIN4         434.92     4.599 No_date   29:31   25.81  n/a      .000
                     +     1.0 02:D4               1.73      .063 No_date   28:35   34.48  n/a      .000
                     +     1.0 02:SWMF-B          24.04      .356 No_date   28:50   47.09  n/a      .000
                     +     1.0 02:SWMBOVF           .00      .000 No_date    0:00     .00  n/a      .000
                  SUM=     1.0 01:D4-EX          460.69     4.958 No_date   29:31   26.95  n/a      .000
 R0010:C00134------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE CHANNEL   ->    1.0 02:D4-EX          460.69     4.958 No_date   29:31   26.95  n/a      .000
      [RDT= 1.00] out<-    1.0 01:DRAIN5         460.69     4.881 No_date   29:37   26.95  n/a      .000
       [L/S/n=  413./ .160/.033]
       {Vmax=  .599:Dmax=  .896}
 R0010:C00135------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS NASHYD     1.0 01:D5               1.90      .057 No_date   28:41   32.13 .497      .000
       [CN= 86.0: N= 3.00: Tp=  .69]
       [IaREC= 4.00: SMIN= 17.43: SMAX=116.21: SK= .010]
       [InterEventTime=  12.00]
 R0010:C00136------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS NASHYD     1.0 01:O-13SDF          9.74      .371 No_date   28:22   30.32 .469      .000
       [CN= 81.0: N= 3.00: Tp=  .43]
       [IaREC= 4.00: SMIN= 25.21: SMAX=168.09: SK= .010]
       [InterEventTime=  12.00]
 R0010:C00137------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE RESERVOIR ->    1.0 02:O-13SDF          9.74      .371 No_date   28:22   30.32  n/a      .000
                out <=    1.0 01:SDF              9.74      .040 No_date   31:17   30.32  n/a      .000
           overflow <=    1.0 03:OVFSDF            .00      .000 No_date    0:00     .00  n/a      .000
     {MxStoUsed=.1596E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
 R0010:C00138------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:DRAIN5         460.69     4.881 No_date   29:37   26.95  n/a      .000
                     +     1.0 02:D5               1.90      .057 No_date   28:41   32.13  n/a      .000
                     +     1.0 02:SDF              9.74      .040 No_date   31:17   30.32  n/a      .000
                  SUM=     1.0 01:PT6MC          472.33     4.951 No_date   29:37   27.04  n/a      .000
 R0010:C00139------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS NASHYD     1.0 01:O-15            10.67      .502 No_date   28:13   29.12 .450      .000
       [CN= 82.0: N= 3.00: Tp=  .30]
       [IaREC= 4.00: SMIN= 23.09: SMAX=153.94: SK= .010]
       [InterEventTime=  12.00]
 R0010:C00140------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:PT6MC          472.33     4.951 No_date   29:37   27.04  n/a      .000
                     +     1.0 02:O-15            10.67      .502 No_date   28:13   29.12  n/a      .000
                  SUM=     1.0 01:M-C            483.00     5.029 No_date   29:36   27.09  n/a      .000
 R0010:C00141------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE CHANNEL   ->    1.0 02:M-C            483.00     5.029 No_date   29:36   27.09  n/a      .000
      [RDT= 1.00] out<-    1.0 01:O-14Ch         483.00     4.686 No_date   30:11   27.09  n/a      .000
       [L/S/n=  845./ .100/.033]
       {Vmax=  .618:Dmax= 1.565}
 R0010:C00142------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS NASHYD     1.0 01:O-14             5.00      .389 No_date   28:04   29.12 .450      .000
       [CN= 82.0: N= 3.00: Tp=  .13]
       [IaREC= 4.00: SMIN= 23.09: SMAX=153.94: SK= .010]
       [InterEventTime=  12.00]
 R0010:C00143------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:O-14Ch         483.00     4.686 No_date   30:11   27.09  n/a      .000
                     +     1.0 02:O-14             5.00      .389 No_date   28:04   29.12  n/a      .000
                  SUM=     1.0 01:OKEEFE         488.00     4.709 No_date   30:11   27.11  n/a      .000
 #*****************************************************************************
 #    Okeefe Pond
 #    - Rating curve obtained assuming 40m3/ha in 24 hours for quality control
 #      and a ratio of the catchment area to the West Clarke pond rating curve
 #      from the MSS for the next coordinates
 #*****************************************************************************
 R0010:C00144------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:S-1-D2          18.67     2.448 No_date   28:02   48.63 .752      .000
       [XIMP=.65:TIMP=.65]
       [LOSS= 2 :CN= 75.0]
       [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .75:LGI= 353.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 33.81: SMAX=225.43: SK= .010]
 R0010:C00145------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:S-1-D3           6.79      .967 No_date   28:01   48.63 .752      .000
       [XIMP=.65:TIMP=.65]
       [LOSS= 2 :CN= 75.0]
       [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .75:LGI= 213.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 33.81: SMAX=225.43: SK= .010]
 R0010:C00146------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:N_OK         53064.36    84.064 No_date   33:41   22.58  n/a      .000
                     +     1.0 02:OKEEFE         488.00     4.709 No_date   30:11   27.11  n/a      .000
                     +     1.0 02:S-1-D2          18.67     2.448 No_date   28:02   48.63  n/a      .000
                     +     1.0 02:S-1-D3           6.79      .967 No_date   28:01   48.63  n/a      .000
                  SUM=     1.0 01:SN_OK        53577.82    85.808 No_date   33:41   22.63  n/a      .000
 R0010:C00147------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     SAVE HYD              1.0 01:SN_OK        53577.82    85.808 No_date   33:41   22.63  n/a      .000
       fname :SN_OK.0010
       remark:Total Flows at Okeefe Drain
 #
 # Hydrograph from Node Okeefe routed to Node at Foster Drain
 # Channel X-Section obtained from RVCA Hydraulic Model - Station 6215
 #
 R0010:C00148------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE CHANNEL   ->    1.0 02:SN_OK        53577.82    85.808 No_date   33:41   22.63  n/a      .000
      [RDT= 1.00] out<-    1.0 01:N_FO         53577.82    85.561 No_date   34:07   22.63  n/a      .000
       [L/S/n= 1183./ .076/.035]
       {Vmax= 1.103:Dmax= 2.861}
 #*****************************************************************************
 #    Catchment FOSTER
 #    - To Foster ditch (north of the Jock)
 #    - Partially developed (medium density); remaining agricultural
 #    - 2020-12-01 JFSA Foster area is 332 as per Foster SWMF Environmental Study Report, CH2MHILL, Aug 2013.
 #    - 2020-12-01 decrease Foster drainage area from (373 HA) to (307.98 HA) after increasing Okeefe drainage area to (5
 #    - 2021-02-12  update Foster area to 325.44 ha as measured from QGIS
 #*****************************************************************************
 R0010:C00149------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:FOSTER         325.44    22.870 No_date   28:13   43.99 .680      .000
       [XIMP=.55:TIMP=.55]
       [LOSS= 2 :CN= 74.0]
       [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  40.:MNP=.250:SCP=   .0]
```

```
        [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1473.:MNI=.013:SCI=   .0]
        [IaRECimp=   4.00: IaRECper=   4.00]
        [SMIN= 36.67: SMAX=244.49: SK= .010]
#******************************************************************************
#    Foster Pond
#    - Rating curve obtained assuming 40m3/ha in 24 hours for quality control
#      and a ratio of the catchment area to the West Clarke pond rating curve
#      from the MSS for the next coordinates
#******************************************************************************
R0010:C00150------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:FOSTER       325.44   22.870 No_date   28:13   43.99  n/a     .000
                out <=    1.0 01:P_FOS        325.44    6.061 No_date   29:06   43.99  n/a     .000
           overflow <=    1.0 03:FO-OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.5862E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00151------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:P_FOS        325.44    6.061 No_date   29:06   43.99  n/a     .000
                    +     1.0 02:FO-OVF          .00     .000 No_date    0:00     .00  n/a     .000
                 SUM=     1.0 01:FOSTER-OUT   325.44    6.061 No_date   29:06   43.99  n/a     .000
#******************************************************************************
R0010:C00152------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:W_CLAR_BRA    73.29    7.523 No_date   28:05   47.94 .741     .000
        [XIMP=.60:TIMP=.65]
        [LOSS= 2 :CN= 77.0]
        [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
        [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 699.:MNI=.013:SCI=   .0]
        [IaRECimp=   4.00: IaRECper=   4.00]
        [SMIN= 31.15: SMAX=207.66: SK= .010]
R0010:C00153------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:W_CLAR_BRA    73.29    7.523 No_date   28:05   47.94  n/a     .000
                out <=    1.0 01:MS_P10        73.29    1.136 No_date   29:00   47.94  n/a     .000
           overflow <=    1.0 03:P10-OVF         .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.1341E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00154------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-FO-D2      4.94     .594 No_date   28:01   43.99 .680     .000
        [XIMP=.55:TIMP=.55]
        [LOSS= 2 :CN= 74.0]
        [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  40.:MNP=.250:SCP=   .0]
        [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 181.:MNI=.013:SCI=   .0]
        [IaRECimp=   4.00: IaRECper=   4.00]
        [SMIN= 36.67: SMAX=244.49: SK= .010]
R0010:C00155------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:FOSTER-OUT   325.44    6.061 No_date   29:06   43.99  n/a     .000
                    +     1.0 02:S-1-FO-D2      4.94     .594 No_date   28:01   43.99  n/a     .000
                 SUM=     1.0 01:980          330.38    6.115 No_date   29:04   43.99  n/a     .000
R0010:C00156------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:980          330.38    6.115 No_date   29:04   43.99  n/a     .000
        fname :980.0010
        remark:Total Flows at Station 980 on Foster Drain
#
# Hydrograph from Node Foster SWM (Station 980)to Node at station 520
# Channel X-Section obtained from RVCA Hydraulic Model - Station 980
#
R0010:C00157------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:980          330.38    6.115 No_date   29:04   43.99  n/a     .000
     [RDT= 1.00] out<-    1.0 01:980-out      330.38    5.914 No_date   29:09   43.99  n/a     .000
        [L/S/n=  460./ .043/.035]
        {Vmax=  .634:Dmax= 1.381}
R0010:C00158------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-FO-D1      5.11     .702 No_date   28:00   48.24 .746     .000
        [XIMP=.65:TIMP=.65]
        [LOSS= 2 :CN= 74.0]
        [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  40.:MNP=.250:SCP=   .0]
        [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 185.:MNI=.013:SCI=   .0]
        [IaRECimp=   4.00: IaRECper=   4.00]
        [SMIN= 36.67: SMAX=244.49: SK= .010]
R0010:C00159------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:980-out      330.38    5.914 No_date   29:09   43.99  n/a     .000
                    +     1.0 02:S-1-FO-D1      5.11     .702 No_date   28:00   48.24  n/a     .000
                 SUM=     1.0 01:520          335.49    5.966 No_date   29:09   44.05  n/a     .000
R0010:C00160------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:520          335.49    5.966 No_date   29:09   44.05  n/a     .000
        fname :520.0010
        remark:Total Flows at Sation 520 on Foster Drain
# Hydrograph from Node at Station 520 (Foster Drain) to Node at station 6016 (Jock River)
# Channel X-Section obtained from RVCA Hydraulic Model - Station 520
#
R0010:C00161------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:520          335.49    5.966 No_date   29:09   44.05  n/a     .000
     [RDT= 1.00] out<-    1.0 01:520-out      335.49    5.922 No_date   29:29   44.05  n/a     .000
        [L/S/n=  860./ .587/.035]
        {Vmax= 1.391:Dmax=  .659}
R0010:C00162------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-FO-F-D    14.96    1.881 No_date   28:02   48.24 .746     .000
        [XIMP=.65:TIMP=.65]
        [LOSS= 2 :CN= 74.0]
        [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  40.:MNP=.250:SCP=   .0]
        [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 316.:MNI=.013:SCI=   .0]
        [IaRECimp=   4.00: IaRECper=   4.00]
        [SMIN= 36.67: SMAX=244.49: SK= .010]
R0010:C00163------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-D8         5.27     .781 No_date   28:01   35.83 .554     .000
        [XIMP=.32:TIMP=.65]
        [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
        [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
        [Impervious   area: IAimp=  .79:SLPI= .75:LGI= 187.:MNI=.013:SCI=   .0]
        [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00164------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:S-1-A         75.88    1.915 No_date   28:36   26.85 .415     .000
        [CN= 77.0: N= 3.00: Tp=  .62]
        [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
        [InterEventTime=  12.00]
R0010:C00165------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:W_CLAR_UND    35.65     .596 No_date   29:11   26.85 .415     .000
        [CN= 77.0: N= 3.00: Tp= 1.10]
        [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
        [InterEventTime=  12.00]
R0010:C00166------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N_FO       53577.82   85.561 No_date   34:07   22.63  n/a     .000
                    +     1.0 02:520-out      335.49    5.922 No_date   29:29   44.05  n/a     .000
                    +     1.0 02:MS_P10        73.29    1.136 No_date   29:00   47.94  n/a     .000
                    +     1.0 02:P10-OVF         .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:W_CLAR_UND    35.65     .596 No_date   29:11   26.85  n/a     .000
                    +     1.0 02:S-1-FO-F-D    14.96    1.881 No_date   28:02   48.24  n/a     .000
                    +     1.0 02:S-1-D8         5.27     .781 No_date   28:01   35.83  n/a     .000
                    +     1.0 02:S-1-A         75.88    1.915 No_date   28:36   26.85  n/a     .000
                 SUM=     1.0 01:SN_FO      54118.36   89.084 No_date   33:33   22.82  n/a     .000
R0010:C00167------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_FO      54118.36   89.084 No_date   33:33   22.82  n/a     .000
        fname :SN_FO.0010
        remark:Total Flows at Foster Drain
# Hydrograph from Node Foster routed to Node at Cedarview Road
# Channel X-Section obtained from RVCA Hydraulic Model - Station 6016
#
R0010:C00168------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_FO      54118.36   89.084 No_date   33:33   22.82  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:N_CE       54118.36   88.895 No_date   33:34   22.82  n/a     .000
        [L/S/n=  159./ .082/.035]
        {Vmax= 1.328:Dmax= 3.414}
#******************************************************************************
#    Catchment S-1
#    - To Jock River (north and south of Jock)
#    - Primarily agricultural fields; portion of sand quarry
#******************************************************************************
R0010:C00169------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:S-1-B         55.36    1.740 No_date   28:24   26.85 .415     .000
        [CN= 77.0: N= 3.00: Tp=  .45]
        [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
        [InterEventTime=  12.00]
#    -  JFSA 2021-02-24 change the name from S-1-BCDC to S-1-A and S-1-B. Change their TP values based on the new areas
#    -  JFSA 2021-02-24 "S-1-BCDC-1" and "S-1-BCDC-2" are not existing anymore. "S-1-BCDC-1" is part of "S-1-FO-D2" and
#    -  JFSA 2021-01-19, after adding Greenbank pond, "S-1-BCDC-3" is not existing anymore
R0010:C00170------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-D1        21.67    2.814 No_date   28:02   48.63 .752     .000
        [XIMP=.65:TIMP=.65]
        [LOSS= 2 :CN= 75.0]
        [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
        [Impervious   area: IAimp= 1.57:SLPI= .75:LGI= 380.:MNI=.013:SCI=   .0]
        [IaRECimp=   4.00: IaRECper=   4.00]
        [SMIN= 33.81: SMAX=225.43: SK= .010]
R0010:C00171------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-D4         3.28     .489 No_date   28:00   48.63 .752     .000
        [XIMP=.65:TIMP=.65]
        [LOSS= 2 :CN= 75.0]
        [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
        [Impervious   area: IAimp= 1.57:SLPI= .75:LGI= 148.:MNI=.013:SCI=   .0]
        [IaRECimp=   4.00: IaRECper=   4.00]
        [SMIN= 33.81: SMAX=225.43: SK= .010]
R0010:C00172------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-D5        12.84    1.749 No_date   28:01   48.63 .752     .000
        [XIMP=.65:TIMP=.65]
        [LOSS= 2 :CN= 75.0]
        [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
        [Impervious   area: IAimp= 1.57:SLPI= .75:LGI= 293.:MNI=.013:SCI=   .0]
        [IaRECimp=   4.00: IaRECper=   4.00]
        [SMIN= 33.81: SMAX=225.43: SK= .010]
R0010:C00173------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-D6         1.75     .269 No_date   28:00   48.63 .752     .000
        [XIMP=.65:TIMP=.65]
        [LOSS= 2 :CN= 75.0]
        [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
        [Impervious   area: IAimp= 1.57:SLPI= .75:LGI= 108.:MNI=.013:SCI=   .0]
        [IaRECimp=   4.00: IaRECper=   4.00]
        [SMIN= 33.81: SMAX=225.43: SK= .010]
R0010:C00174------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-D7         2.03     .311 No_date   28:00   48.63 .752     .000
        [XIMP=.65:TIMP=.65]
        [LOSS= 2 :CN= 75.0]
        [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
        [Impervious   area: IAimp= 1.57:SLPI= .75:LGI= 116.:MNI=.013:SCI=   .0]
        [IaRECimp=   4.00: IaRECper=   4.00]
        [SMIN= 33.81: SMAX=225.43: SK= .010]
#    Catchment W_CLAR
#    - To West Clarke Drain (south of the Jock)
#    - Subdivision with 43% imp. as per Barrhaven South MSS
#    - 2020-11-30 update CLARKE Tributary Drainage Area to  = 121 ha based on P598(04)-11
#    - 2020-11-30 split CLARKE Drainage Area to MAJOR and ALL
#******************************************************************************
R0010:C00175------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:W_CLAR_MJ      1.77     .229 No_date   28:00   43.97 .680     .000
        [XIMP=.46:TIMP=.59]
        [LOSS= 2 :CN= 77.0]
        [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
        [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 109.:MNI=.013:SCI=   .0]
        [IaRECimp=   4.00: IaRECper=   4.00]
        [SMIN= 31.15: SMAX=207.66: SK= .010]
# 5-Year + 12% Capture
R0010:C00176------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:W_CLAR_MJ      1.77     .229 No_date   28:00   43.97  n/a     .000
                out <=    1.0 01:W_CLAR_MJn     1.77     .213 No_date   27:58   43.97  n/a     .000
           overflow <=    1.0 03:W_CLAR_MJj      .00     .013 No_date   28:00   43.97  n/a     .000
     {MxStoUsed=.8179E-04  m3, TotOvfVol=.1952E-03  m3, N-Ovf=    1, TotDurOvf=    0.hrs}
R0010:C00177------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:W_CLAR_ALL   119.40   12.497 No_date   28:05   47.94 .741     .000
        [XIMP=.60:TIMP=.65]
        [LOSS= 2 :CN= 77.0]
        [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
        [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 892.:MNI=.013:SCI=   .0]
        [IaRECimp=   4.00: IaRECper=   4.00]
        [SMIN= 31.15: SMAX=207.66: SK= .010]
R0010:C00178------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:W_CLAR_ALL   119.40   12.497 No_date   28:05   47.94  n/a     .000
                    +     1.0 02:W_CLAR_MJj      .00     .013 No_date   28:00   43.97  n/a     .000
                 SUM=     1.0 01:W_CLAR       119.40   12.497 No_date   28:05   47.94  n/a     .000
R0010:C00179------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:W_CLAR       119.40   12.497 No_date   28:05   47.94  n/a     .000
        fname :W_CLAR.0010
        remark:Total Flows to West Clarke
#******************************************************************************
#    West Clarke Pond 2
#    - Rating curve obtained from Barrhaven South MSS modeling
#    - Tributary Drainage Area to MSS Pond 2 = 241 ha
#******************************************************************************
R0010:C00180------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:W_CLAR       119.40   12.497 No_date   28:05   47.94  n/a     .000
                out <=    1.0 01:MS_P2        119.40    3.959 No_date   28:33   47.94  n/a     .000
           overflow <=    1.0 03:P2-OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.2802E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
#******************************************************************************
R0010:C00181------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N_CE       54118.36   88.895 No_date   33:34   22.82  n/a     .000
                    +     1.0 02:S-1-D4         3.28     .489 No_date   28:00   48.63  n/a     .000
                    +     1.0 02:S-1-D5        12.84    1.749 No_date   28:01   48.63  n/a     .000
                    +     1.0 02:MS_P2        119.40    3.959 No_date   28:33   47.94  n/a     .000
                    +     1.0 02:P2-OVF          .00     .000 No_date    0:00     .00  n/a     .000
                 SUM=     1.0 01:SN_CE      54253.88   89.720 No_date   33:34   22.88  n/a     .000
R0010:C00182------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_CE      54253.88   89.720 No_date   33:34   22.88  n/a     .000
        fname :SN_CE.0010
        remark:Total Flows before Station 5737 on Jock River
# Channel X-Section obtained from RVCA Hydraulic Model - Station 5737
# 2021-02-25 add station 5737 before station 5002. Station 5737 was extracted from the HEC-RAS model T:\PROJ\1474-16\Des
# JFSA 2021-03-02  change the slope to 0.0175% instead of 0.02593 to stabilize the model
R0010:C00183------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_CE      54253.88   89.720 No_date   33:34   22.88  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:5737       54253.88   85.186 No_date   36:20   22.88  n/a     .000
        [L/S/n=  270./ .018/.035]
        {Vmax=  .729:Dmax= 4.467}
R0010:C00184------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:5737       54253.88   85.186 No_date   36:20   22.88  n/a     .000
                    +     1.0 02:S-1-D1        21.67    2.814 No_date   28:02   48.63  n/a     .000
                    +     1.0 02:S-1-D6         1.75     .269 No_date   28:00   48.63  n/a     .000
                    +     1.0 02:S-1-D7         2.03     .311 No_date   28:00   48.63  n/a     .000
                 SUM=     1.0 01:5002       54279.34   85.238 No_date   36:19   22.89  n/a     .000
R0010:C00185------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:5002       54279.34   85.238 No_date   36:19   22.89  n/a     .000
        fname :5002.0010
        remark:Total Flows before Station 5002 on Jock River
# Hydrograph from Node Cedarview Road routed to Node at West Clarke Drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 5002
# JFSA 2021-02-19 Change the slope from 0.01 % (as per Stantec Report 2007) to 0.0255 % so the model will be more stable
# JFSA 2021-02-19 Change to three ROUTE CHANNEL with length 275 m each instead of one with 825 m length so the model wil
# JFSA 2021-02-26 change the length of 5002 route channel from 825 m to 736 m. That is because of adding station 5737 be
R0010:C00186------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:5002       54279.34   85.238 No_date   36:19   22.89  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:N_WCa      54279.34   85.270 No_date   35:56   22.89  n/a     .000
        [L/S/n=  245./ .095/.035]
        {Vmax= 1.131:Dmax= 2.520}
R0010:C00187------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:N_WCa      54279.34   85.270 No_date   35:56   22.89  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:N_WCb      54279.34   85.708 No_date   35:56   22.89  n/a     .000
        [L/S/n=  245./ .095/.035]
        {Vmax= 1.132:Dmax= 2.521}
R0010:C00188------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:N_WCb      54279.34   85.708 No_date   35:56   22.89  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:N_WC       54279.34   85.675 No_date   35:56   22.89  n/a     .000
        [L/S/n=  245./ .095/.035]
        {Vmax= 1.133:Dmax= 2.526}
#******************************************************************************
# Hydrograph from Node West Clarke routed to Node at Kennedy - Burnett Drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 4534
#
R0010:C00189------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:N_WC       54279.34   85.675 No_date   35:56   22.89  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:N_KB       54279.34   85.488 No_date   35:57   22.89  n/a     .000
        [L/S/n= 1020./ .050/.035]
        {Vmax= 1.004:Dmax= 3.137}
#******************************************************************************
#    Catchment KEN_BU
#    - To Kennedy-Burnett SWM Facility
#    - Outlets to Fraser-Clarke drain (north of the Jock)
#    - Medium density residential subdivision
#******************************************************************************
#******************************************************************************
#   Existing Kennedy-Burnett SWM Facility
#    - Rating curve obtained from URTKBP
#    - Tributary Drainage Area to Pond = 160 ha
#******************************************************************************
R0010:C00190------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-01A        40.82    3.338 No_date   28:12   24.14 .373     .000
        [XIMP=.10:TIMP=.40]
        [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
        [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  40.:MNP=.250:SCP=   .0]
        [Impervious   area: IAimp=  .79:SLPI= .50:LGI= 522.:MNI=.013:SCI=   .0]
        [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00191------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-01A        40.82    3.338 No_date   28:12   24.14  n/a     .000
     Major System   /     1.0 02:KB-01A-MJ       .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-01A-MN     40.82    3.338 No_date   28:12   24.14  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00192------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-01A-MJ       .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:KB-01A-MN     40.82    3.338 No_date   28:12   24.14  n/a     .000
                 SUM=     1.0 01:KB-01A-S      40.82    3.338 No_date   28:12   24.14  n/a     .000
R0010:C00193------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-01B        31.10    2.335 No_date   28:08   26.73 .413     .000
        [XIMP=.19:TIMP=.38]
        [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
        [Pervious     area: IAper= 4.67:SLPP= .42:LGP=  40.:MNP=.250:SCP=   .0]
        [Impervious   area: IAimp=  .79:SLPI= .42:LGI= 455.:MNI=.013:SCI=   .0]
        [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00194------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-01B        31.10    2.335 No_date   28:08   26.73  n/a     .000
     Major System   /     1.0 02:KB-01B-MJ       .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-01B-MN     31.10    1.585 No_date   27:59   26.78  n/a     .000
      {MjSysSto=.8272E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00195------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-01B-MJ       .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:KB-01B-MN     31.10    1.585 No_date   27:59   26.78  n/a     .000
                 SUM=     1.0 01:KB-01B-S      31.10    1.585 No_date   27:59   26.78  n/a     .000
R0010:C00196------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-01C        13.78    1.534 No_date   28:05   27.74 .429     .000
        [XIMP=.20:TIMP=.41]
        [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
        [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
        [Impervious   area: IAimp=  .79:SLPI= .50:LGI= 303.:MNI=.013:SCI=   .0]
        [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00197------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-01C        13.78    1.534 No_date   28:05   27.74  n/a     .000
     Major System   /     1.0 02:KB-01C-MJ       .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-01C-MN     13.78    1.350 No_date   28:00   27.93  n/a     .000
      {MjSysSto=.6901E+02, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00198------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-01C-MJ       .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:KB-01C-MN     13.78    1.350 No_date   28:00   27.93  n/a     .000
                 SUM=     1.0 01:KB-01C-S      13.78    1.350 No_date   28:00   27.93  n/a     .000
R0010:C00199------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-03         84.78    7.685 No_date   28:09   27.30 .422     .000
        [XIMP=.20:TIMP=.39]
        [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
        [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
        [Impervious   area: IAimp=  .79:SLPI= .63:LGI= 752.:MNI=.013:SCI=   .0]
        [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00200------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-03         84.78    7.685 No_date   28:09   27.30  n/a     .000
     Major System   /     1.0 02:KB-03-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-03-MN      84.78    5.270 No_date   27:59   27.40  n/a     .000
      {MjSysSto=.2022E+04, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00201------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-03-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:KB-03-MN      84.78    5.270 No_date   27:59   27.40  n/a     .000
                 SUM=     1.0 01:KB-03-S       84.78    5.270 No_date   27:59   27.40  n/a     .000
R0010:C00202------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-04          6.95    1.217 No_date   28:01   56.45 .873     .000
        [XIMP=.85:TIMP=.85]
        [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
        [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
        [Impervious   area: IAimp=  .94:SLPI= .50:LGI= 215.:MNI=.013:SCI=   .0]
        [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00203------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-04          6.95    1.217 No_date   28:01   56.45  n/a     .000
     Major System   /     1.0 02:KB-04-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-04-MN       6.95     .503 No_date   27:46   56.53  n/a     .000
      {MjSysSto=.5392E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00204------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
```

```
    ADD HYD                 1.0 02:KB-04-MJ          .00      .000 No_date    0:00     .00  n/a      .000
                       +    1.0 02:KB-04-MN         6.95      .503 No_date   27:46   56.53  n/a      .000
                    SUM=    1.0 01:KB-04-S          6.95      .503 No_date   27:46   56.53  n/a      .000
R0010:C00205------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-05          5.19      .983 No_date   28:00   59.76 .924      .000
      [XIMP=.93:TIMP=.93]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 186.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00206------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-06         12.93     2.536 No_date   28:00   57.57 .890      .000
      [XIMP=.87:TIMP=.87]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .94:SLPI=4.75:LGI= 294.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00207------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-06         12.93     2.536 No_date   28:00   57.57  n/a      .000
     Major System   /     1.0 02:KB-06-MJ        .00      .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:KB-06-MN      12.93     2.262 No_date   27:56   57.80  n/a      .000
      {MjSysSto=.6369E+02, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00208------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                 1.0 02:KB-06-MJ          .00      .000 No_date    0:00     .00  n/a      .000
                       +    1.0 02:KB-06-MN        12.93     2.262 No_date   27:56   57.80  n/a      .000
                    SUM=    1.0 01:KB-06-S         12.93     2.262 No_date   27:56   57.80  n/a      .000
R0010:C00209------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-11          4.03      .686 No_date   28:00   48.04 .743      .000
      [XIMP=.68:TIMP=.68]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI=2.00:LGI= 164.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00210------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-11          4.03      .686 No_date   28:00   48.04  n/a      .000
     Major System   /     1.0 02:KB-11-MJ        .00      .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:KB-11-MN       4.03      .577 No_date   27:55   48.44  n/a      .000
      {MjSysSto=.2954E+02, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00211------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                 1.0 02:KB-11-MJ          .00      .000 No_date    0:00     .00  n/a      .000
                       +    1.0 02:KB-11-MN         4.03      .577 No_date   27:55   48.44  n/a      .000
                    SUM=    1.0 01:KB-11-S          4.03      .577 No_date   27:55   48.44  n/a      .000
R0010:C00212------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S1             4.99     1.020 No_date   28:00   59.76 .924      .000
      [XIMP=.93:TIMP=.93]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=2.00:LGI= 182.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00213------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-15          2.15      .377 No_date   28:00   54.15 .837      .000
      [XIMP=.79:TIMP=.79]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .16:SLPI= .30:LGI= 120.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00214------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                 1.0 02:KB-01A-S        40.82     3.338 No_date   28:12   24.14  n/a      .000
                       +    1.0 02:KB-01B-S        31.10     1.585 No_date   27:59   26.78  n/a      .000
                       +    1.0 02:KB-01C-S        13.78     1.350 No_date   28:00   27.93  n/a      .000
                       +    1.0 02:KB-03-S         84.78     5.270 No_date   27:59   27.40  n/a      .000
                       +    1.0 02:KB-04-S          6.95      .503 No_date   27:46   56.53  n/a      .000
                       +    1.0 02:KB-05            5.19      .983 No_date   28:00   59.76  n/a      .000
                       +    1.0 02:KB-06-S         12.93     2.262 No_date   27:56   57.80  n/a      .000
                       +    1.0 02:KB-11-S          4.03      .577 No_date   27:55   48.44  n/a      .000
                       +    1.0 02:KB-15            2.15      .377 No_date   28:00   54.15  n/a      .000
                       +    1.0 02:S1               4.99     1.020 No_date   28:00   59.76  n/a      .000
                    SUM=    1.0 01:KB-P1          206.72    16.418 No_date   28:01   31.86  n/a      .000
R0010:C00215------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:KB-P1        206.72    16.418 No_date   28:01   31.86  n/a      .000
                 out <=   1.0 01:KB-P1R       206.72    12.427 No_date   28:17   31.86  n/a      .000
            overflow <=   1.0 03:KB-P1ovf        .00      .000 No_date    0:00     .00  n/a      .000
     {MxStoUsed=.7282E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00216------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                 1.0 02:KB-P1R         206.72    12.427 No_date   28:17   31.86  n/a      .000
                       +    1.0 02:KB-P1ovf          .00      .000 No_date    0:00     .00  n/a      .000
                    SUM=    1.0 01:KB-Pond1       206.72    12.427 No_date   28:17   31.86  n/a      .000
R0010:C00217------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD                1.0 01:KB-Pond1       206.72    12.427 No_date   28:17   31.86  n/a      .000
      fname :KB-Pond1.0010
      remark:Total Flows at KB first pond
R0010:C00218------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-07         10.86     2.042 No_date   28:00   57.07 .882      .000
      [XIMP=.86:TIMP=.86]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI=2.00:LGI= 269.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00219------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-07         10.86     2.042 No_date   28:00   57.07  n/a      .000
     Major System   /     1.0 02:KB-07-MJ        .00      .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:KB-07-MN      10.86     2.042 No_date   28:00   57.07  n/a      .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00220------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                 1.0 02:KB-07-MJ          .00      .000 No_date    0:00     .00  n/a      .000
                       +    1.0 02:KB-07-MN        10.86     2.042 No_date   28:00   57.07  n/a      .000
                    SUM=    1.0 01:KB-07-S         10.86     2.042 No_date   28:00   57.07  n/a      .000
R0010:C00221------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-08          6.61     1.072 No_date   28:00   46.33 .716      .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI=2.00:LGI= 210.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00222------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-08          6.61     1.072 No_date   28:00   46.33  n/a      .000
     Major System   /     1.0 02:KB-08-MJ        .00      .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:KB-08-MN       6.61     1.058 No_date   28:00   46.37  n/a      .000
      {MjSysSto=.9091E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00223------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                 1.0 02:KB-08-MJ          .00      .000 No_date    0:00     .00  n/a      .000
                       +    1.0 02:KB-08-MN         6.61     1.058 No_date   28:00   46.37  n/a      .000
                    SUM=    1.0 01:KB-08-S          6.61     1.058 No_date   28:00   46.37  n/a      .000
R0010:C00224------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-09          2.60      .515 No_date   28:00   56.40 .872      .000
      [XIMP=.86:TIMP=.86]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=2.00:LGI= 132.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00225------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-10_1        2.37      .470 No_date   28:00   56.40 .872      .000
      [XIMP=.86:TIMP=.86]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=2.00:LGI= 126.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00226------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-10_2        1.14      .229 No_date   28:00   56.40 .872      .000
      [XIMP=.86:TIMP=.86]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=2.00:LGI=  87.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00227------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-12          4.86      .900 No_date   28:00   53.41 .826      .000
      [XIMP=.79:TIMP=.79]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.10:SLPI=2.00:LGI= 180.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00228------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-12          4.86      .900 No_date   28:00   53.41  n/a      .000
     Major System   /     1.0 02:KB-12-MJ        .00      .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:KB-12-MN       4.86      .867 No_date   27:58   53.47  n/a      .000
      {MjSysSto=.3261E+01, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00229------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                 1.0 02:KB-12-MJ          .00      .000 No_date    0:00     .00  n/a      .000
                       +    1.0 02:KB-12-MN         4.86      .867 No_date   27:58   53.47  n/a      .000
                    SUM=    1.0 01:KB-12-S          4.86      .867 No_date   27:58   53.47  n/a      .000
R0010:C00230------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-13         10.19     1.611 No_date   28:00   46.33 .716      .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI=2.00:LGI= 261.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00231------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-13         10.19     1.611 No_date   28:00   46.33  n/a      .000
     Major System   /     1.0 02:KB-13-MJ        .00      .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:KB-13-MN      10.19     1.611 No_date   28:00   46.33  n/a      .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00232------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                 1.0 02:KB-13-MJ          .00      .000 No_date    0:00     .00  n/a      .000
                       +    1.0 02:KB-13-MN        10.19     1.611 No_date   28:00   46.33  n/a      .000
                    SUM=    1.0 01:KB-13-S         10.19     1.611 No_date   28:00   46.33  n/a      .000
R0010:C00233------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-14          5.47      .898 No_date   28:00   46.33 .716      .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI=2.00:LGI= 191.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00234------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-14          5.47      .898 No_date   28:00   46.33  n/a      .000
     Major System   /     1.0 02:KB-14-MJ        .00      .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:KB-14-MN       5.47      .873 No_date   27:59   46.40  n/a      .000
      {MjSysSto=.1663E+01, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00235------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                 1.0 02:KB-14-MJ          .00      .000 No_date    0:00     .00  n/a      .000
                       +    1.0 02:KB-14-MN         5.47      .873 No_date   27:59   46.40  n/a      .000
                    SUM=    1.0 01:KB-14-S          5.47      .873 No_date   27:59   46.40  n/a      .000
R0010:C00236------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-16_2        3.42      .545 No_date   28:01   50.20 .776      .000
      [XIMP=.71:TIMP=.71]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .16:SLPI= .30:LGI= 151.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00237------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                 1.0 02:KB-Pond1       206.72    12.427 No_date   28:17   31.86  n/a      .000
                       +    1.0 02:KB-07-S         10.86     2.042 No_date   28:00   57.07  n/a      .000
                       +    1.0 02:KB-08-S          6.61     1.058 No_date   28:00   46.37  n/a      .000
                       +    1.0 02:KB-09            2.60      .515 No_date   28:00   56.40  n/a      .000
                       +    1.0 02:KB-10_1          2.37      .470 No_date   28:00   56.40  n/a      .000
                       +    1.0 02:KB-10_2          1.14      .229 No_date   28:00   56.40  n/a      .000
                       +    1.0 02:KB-12-S          4.86      .867 No_date   27:58   53.47  n/a      .000
                       +    1.0 02:KB-13-S         10.19     1.611 No_date   28:00   46.33  n/a      .000
                       +    1.0 02:KB-14-S          5.47      .873 No_date   27:59   46.40  n/a      .000
                       +    1.0 02:KB-16_2          3.42      .545 No_date   28:01   50.20  n/a      .000
                    SUM=    1.0 01:KB-P2          254.24    19.235 No_date   28:01   35.46  n/a      .000
R0010:C00238------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:KB-P2        254.24    19.235 No_date   28:01   35.46  n/a      .000
                 out <=   1.0 01:KB-P2R       254.24    15.083 No_date   28:10   35.46  n/a      .000
            overflow <=   1.0 03:KB-P2ovf        .00      .000 No_date    0:00     .00  n/a      .000
     {MxStoUsed=.7575E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00239------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                 1.0 02:KB-P2R         254.24    15.083 No_date   28:10   35.46  n/a      .000
                       +    1.0 02:KB-P2ovf          .00      .000 No_date    0:00     .00  n/a      .000
                    SUM=    1.0 01:KB-Pond2       254.24    15.083 No_date   28:10   35.46  n/a      .000
R0010:C00240------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD                1.0 01:KB-Pond2       254.24    15.083 No_date   28:10   35.46  n/a      .000
      fname :KB-Pond2.0010
      remark:Total Flows at KB second pond
R0010:C00241------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-16_1        2.80      .465 No_date   28:01   52.17 .806      .000
      [XIMP=.75:TIMP=.75]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .16:SLPI= .30:LGI= 137.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00242------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                 1.0 02:KB-Pond2       254.24    15.083 No_date   28:10   35.46  n/a      .000
                       +    1.0 02:KB-16_1          2.80      .465 No_date   28:01   52.17  n/a      .000
                    SUM=    1.0 01:KB-P3          257.04    15.295 No_date   28:08   35.64  n/a      .000
R0010:C00243------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:KB-P3        257.04    15.295 No_date   28:08   35.64  n/a      .000
                 out <=   1.0 01:KB-P3R        12.26      .051 No_date   17:31   35.64  n/a      .000
            overflow <=   1.0 03:KB-P3ovf     244.78    15.243 No_date   28:09   35.64  n/a      .000
     {MxStoUsed=.1993E-02  m3, TotOvfVol=.8724E+01  m3, N-Ovf=    2, TotDurOvf=   23.hrs}
R0010:C00244------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                 1.0 02:KB-P3R          12.26      .051 No_date   17:31   35.64  n/a      .000
                       +    1.0 02:KB-P3ovf       244.78    15.243 No_date   28:09   35.64  n/a      .000
                    SUM=    1.0 01:KB-Pond3       257.04    15.294 No_date   28:09   35.64  n/a      .000
R0010:C00245------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD                1.0 01:KB-Pond3       257.04    15.294 No_date   28:09   35.64  n/a      .000
      fname :KB-Pond3.0010
      remark:Total Flows at KB third pond
#****************************************************************************
#    EXISTING / PROPOSED Subcatchments (Kennedy-Burnett SWM Facility (118080), SWM Modeling Approach, NOVATECH Report Ju
#    - TO FRASER-CLARKE DRAIN
#****************************************************************************
R0010:C00246------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:FC-01          8.03     1.049 No_date   28:01   37.67 .582      .000
      [XIMP=.47:TIMP=.47]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 231.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00247------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:FC-01          8.03     1.049 No_date   28:01   37.67  n/a      .000
     Major System   /     1.0 02:FC-01-MJ        .00      .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:FC-01-MN       8.03      .756 No_date   28:17   37.91  n/a      .000
      {MjSysSto=.1270E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00248------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                 1.0 02:FC-01-MJ          .00      .000 No_date    0:00     .00  n/a      .000
                       +    1.0 02:FC-01-MN         8.03      .756 No_date   27:55   37.91  n/a      .000
                    SUM=    1.0 01:FC-01-S          8.03      .756 No_date   27:55   37.91  n/a      .000
R0010:C00249------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:FC-02         16.05     2.930 No_date   28:01   59.76 .924      .000
      [XIMP=.93:TIMP=.93]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 327.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00250------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:FC-02         16.05     2.930 No_date   28:01   59.76  n/a      .000
     Major System   /     1.0 02:FC-02-MJ        .00      .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:FC-02-MN      16.05     1.159 No_date   27:46   59.94  n/a      .000
      {MjSysSto=.1407E+04, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00251------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                 1.0 02:FC-02-MJ          .00      .000 No_date    0:00     .00  n/a      .000
                       +    1.0 02:FC-02-MN        16.05     1.159 No_date   27:46   59.94  n/a      .000
                    SUM=    1.0 01:FC-02-S         16.05     1.159 No_date   27:46   59.94  n/a      .000
R0010:C00252------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:FC-03          7.37     1.130 No_date   28:01   45.83 .708      .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 222.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00253------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:FC-03          7.37     1.130 No_date   28:01   45.83  n/a      .000
     Major System   /     1.0 02:FC-03-MJ        .00      .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:FC-03-MN       7.37      .358 No_date   27:45   45.93  n/a      .000
      {MjSysSto=.6763E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00254------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                 1.0 02:FC-03-MJ          .00      .000 No_date    0:00     .00  n/a      .000
                       +    1.0 02:FC-03-MN         7.37      .358 No_date   27:45   45.93  n/a      .000
                    SUM=    1.0 01:FC-03-S          7.37      .358 No_date   27:45   45.93  n/a      .000
R0010:C00255------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:FC-04         12.87     1.906 No_date   28:01   45.83 .708      .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 293.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00256------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:FC-04         12.87     1.906 No_date   28:01   45.83  n/a      .000
     Major System   /     1.0 02:FC-04-MJ        .00      .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:FC-04-MN      12.87      .741 No_date   27:46   45.93  n/a      .000
      {MjSysSto=.9380E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00257------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                 1.0 02:FC-04-MJ          .00      .000 No_date    0:00     .00  n/a      .000
                       +    1.0 02:FC-04-MN        12.87      .741 No_date   27:46   45.93  n/a      .000
                    SUM=    1.0 01:FC-04-S         12.87      .741 No_date   27:46   45.93  n/a      .000
#****************************************************************************
#    PROPOSED Subcatchments (Kennedy-Burnett SWM Facility (118080), SWM Modeling Approach, NOVATECH Report June, 2020)
#    - TO JOCK RIVER
#****************************************************************************
R0010:C00258------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:JR-01          8.24     1.257 No_date   28:01   45.83 .708      .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 234.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00259------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:JR-01          8.24     1.257 No_date   28:01   45.83  n/a      .000
     Major System   /     1.0 02:JR-01-MJ        .00      .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:JR-01-MN       8.24      .563 No_date   28:39   46.14  n/a      .000
      {MjSysSto=.4889E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00260------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                 1.0 02:JR-01-MJ          .00      .000 No_date    0:00     .00  n/a      .000
                       +    1.0 02:JR-01-MN         8.24      .563 No_date   27:47   46.14  n/a      .000
                    SUM=    1.0 01:JR-01-S          8.24      .563 No_date   27:47   46.14  n/a      .000
R0010:C00261------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:JR-02          1.59      .264 No_date   28:00   45.83 .708      .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 103.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00262------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:JR-02          1.59      .264 No_date   28:00   45.83  n/a      .000
     Major System   /     1.0 02:JR-02-MJ        .00      .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:JR-02-MN       1.59      .153 No_date   27:51   46.12  n/a      .000
      {MjSysSto=.5453E+02, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00263------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                 1.0 02:JR-02-MJ          .00      .000 No_date    0:00     .00  n/a      .000
                       +    1.0 02:JR-02-MN         1.59      .153 No_date   27:51   46.12  n/a      .000
                    SUM=    1.0 01:JR-02-S          1.59      .153 No_date   27:51   46.12  n/a      .000
#****************************************************************************
#    Catchment FRASER
#    - To Fraser-Clarke drain (north of the Jock)
#    - Developed land with assumed 43% imp.
#    - 2020-12-17 Change Fraser area to be 35.1 as measured from QGIS
#    - 2020-12-17 All Fraser is undeveloped (Nashyd)
#****************************************************************************
R0010:C00264------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:FRASER-DRN    13.65      .447 No_date   28:22   26.85 .415      .000
      [CN= 77.0: N= 3.00: Tp=  .43]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0010:C00265------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:FRASER-D      21.61     2.700 No_date   28:01   47.42 .733      .000
      [XIMP=.58:TIMP=.58]
      [LOSS= 2 :CN= 80.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 380.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 26.32: SMAX=175.50: SK= .010]
R0010:C00266------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:FRASER-D      21.61     2.700 No_date   28:01   47.42  n/a      .000
     Major System   /     1.0 02:FRASER-J        .00      .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:FRASER-N      21.61     2.281 No_date   27:57   47.46  n/a      .000
      {MjSysSto=.1390E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00267------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                 1.0 02:FRASER-J          .00      .000 No_date    0:00     .00  n/a      .000
                       +    1.0 02:FRASER-N        21.61     2.281 No_date   27:57   47.46  n/a      .000
                    SUM=    1.0 01:FRASER-S        21.61     2.281 No_date   27:57   47.46  n/a      .000
R0010:C00268------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                 1.0 02:KB-Pond3       257.04    15.294 No_date   28:09   35.64  n/a      .000
                       +    1.0 02:S-1-B           55.36     1.740 No_date   28:24   26.85  n/a      .000
```

```
                   +     1.0 02:FRASER-DRN    13.65     .447 No_date   28:22   26.85  n/a     .000
                   +     1.0 02:FRASER-S      21.61    2.281 No_date   27:57   47.46  n/a     .000
                   +     1.0 02:N_KB       54279.34   85.488 No_date   35:57   22.89  n/a     .000
                   +     1.0 02:FC-01-S        8.03     .756 No_date   27:55   37.91  n/a     .000
                   +     1.0 02:FC-02-S       16.05    1.159 No_date   27:46   59.94  n/a     .000
                   +     1.0 02:FC-03-S        7.37     .358 No_date   27:45   45.93  n/a     .000
                SUM=     1.0 01:4241       54658.45   86.106 No_date   35:57   22.98  n/a     .000
R0010:C00269------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD             1.0 01:4241       54658.45   86.106 No_date   35:57   22.98  n/a     .000
      fname :4241.0010
      remark:Total Flows at Ken-Burnett Outlet
# Hydrograph from Node Ken-Burnett to station 3633
# Channel X-Section obtained from RVCA Hydraulic Model - Station 4241
#
R0010:C00270------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->   1.0 02:4241       54658.45   86.106 No_date   35:57   22.98  n/a     .000
     [RDT= 1.00] out<-   1.0 01:4241-out   54658.45   86.076 No_date   35:57   22.98  n/a     .000
      [L/S/n=  294./ .109/.035]
      {Vmax= 1.173:Dmax= 2.018}
R0010:C00271------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              1.0 02:4241-out   54658.45   86.076 No_date   35:57   22.98  n/a     .000
                   +     1.0 02:FC-04-S       12.87     .741 No_date   27:46   45.93  n/a     .000
                   +     1.0 02:JR-01-S        8.24     .563 No_date   27:47   46.14  n/a     .000
                   +     1.0 02:JR-02-S        1.59     .153 No_date   27:51   46.12  n/a     .000
                SUM=     1.0 01:SN_KB      54681.14   86.123 No_date   35:57   22.99  n/a     .000
R0010:C00272------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD             1.0 01:SN_KB      54681.14   86.123 No_date   35:57   22.99  n/a     .000
      fname :SN_KB.0010
      remark:HYD_COMMENT=["Total Flows before Station 3633]
# Hydrograph from Station 3633 to Node Todd
# Channel X-Section obtained from RVCA Hydraulic Model - Station 3633
# JFSA 2021-02-26 change the channel length (at station 3633) from 650m to 608m and change the slope from 0.0498% to 0.2
#
R0010:C00273------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->   1.0 02:SN_KB      54681.14   86.123 No_date   35:57   22.99  n/a     .000
     [RDT= 1.00] out<-   1.0 01:N_TO       54681.14   85.255 No_date   37:08   22.99  n/a     .000
      [L/S/n=  608./ .247/.035]
      {Vmax= 1.555:Dmax= 1.520}
#****************************************************************************
#    Catchment Greenbank
#    - To Greenbank Drain (south of the Jock)
#    - JFSA 2021-01-18 add Greenbank pond as per JFSA, P598(06)-15, June 2016
#    - JFSA 2021-01-19 update area from 37.479 ha to 36.6 ha based on GIS measurements
#****************************************************************************
R0010:C00274------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:Greenbank     36.60    4.662 No_date   28:02   49.38 .763     .000
      [XIMP=.64:TIMP=.68]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 494.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0010:C00275------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:Greenbank     36.60    4.662 No_date   28:02   49.38  n/a     .000
                out <=    1.0 01:GreenB_MN     36.60    1.697 No_date   28:18   49.38  n/a     .000
           overflow <=    1.0 03:GreenB_MJ       .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.8299E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00276------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N_TO       54681.14   85.255 No_date   37:08   22.99  n/a     .000
                   +      1.0 02:GreenB_MJ       .00     .000 No_date    0:00     .00  n/a     .000
                   +      1.0 02:GreenB_MN     36.60    1.697 No_date   28:18   49.38  n/a     .000
                SUM=      1.0 01:GreenB     54717.74   85.389 No_date   35:58   23.01  n/a     .000
R0010:C00277------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:GreenB     54717.74   85.389 No_date   35:58   23.01  n/a     .000
      fname :GreenB.0010
      remark:Total Flows at Greenbank Drain
#****************************************************************************
#    Catchment TODD
#    - To Todd Drain (south of the Jock)
#    - Subdivision with 43% imp. as per Barrhaven South MSS
#    - 2020-11-30 increase imp. based on P598(04)-11
#    - 2020-11-30 update TODD Tributary Drainage Area to  = 146.015 ha based on P598(04)-11
#    - 2020-11-30 split TODD Drainage Area to MAJOR, MINOR, POND and ALL
#****************************************************************************
#    - JFSA 2021-01-19 add "TODD_MN1" as part of Clarke("W_CLAR_MJ") and remove it from Todd
R0010:C00278------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:TODD_MN2       2.10     .282 No_date   28:00   44.92 .694     .000
      [XIMP=.53:TIMP=.57]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 118.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0010:C00279------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:TODD_MN3        .12     .016 No_date   28:00   44.90 .694     .000
      [XIMP=.53:TIMP=.57]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI=  28.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0010:C00280------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:TODD_MJ       30.23    3.512 No_date   28:02   46.20 .714     .000
      [XIMP=.52:TIMP=.64]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 449.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0010:C00281------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:TODD_ALL     112.91   10.943 No_date   28:05   44.71 .691     .000
      [XIMP=.52:TIMP=.57]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 868.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0010:C00282------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:TODD_P         3.06     .451 No_date   28:00   48.23 .745     .000
      [XIMP=.63:TIMP=.63]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 143.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
# 5-Year + 12% Capture
R0010:C00283------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:TODD_MJ       30.23    3.512 No_date   28:02   46.20  n/a     .000
                out <=    1.0 01:TODD_MJn      30.14    3.314 No_date   28:00   46.20  n/a     .000
           overflow <=    1.0 03:TODD_MJj        .09     .190 No_date   28:03   46.20  n/a     .000
     {MxStoUsed=.4110E-03  m3, TotOvfVol=.4062E-02  m3, N-Ovf=    1, TotDurOvf=    0.hrs}
# 5-Year + 12% Capture
R0010:C00284------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:TODD_MN2       2.10     .282 No_date   28:00   44.92  n/a     .000
                out <=    1.0 01:TODD_MN2n      2.10     .268 No_date   27:58   44.92  n/a     .000
           overflow <=    1.0 03:TODD_MN2j       .00     .011 No_date   28:00   44.92  n/a     .000
     {MxStoUsed=.1267E-03  m3, TotOvfVol=.1440E-03  m3, N-Ovf=    1, TotDurOvf=    0.hrs}
R0010:C00285------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:TODD_MN3        .12     .016 No_date   28:00   44.90  n/a     .000
                out <=    1.0 01:TODD_MN3n       .12     .016 No_date   28:00   44.90  n/a     .000
           overflow <=    1.0 03:TODD_MN3j       .00     .000 No_date   28:00   44.90  n/a     .000
     {MxStoUsed=.1007E-03  m3, TotOvfVol=.1379E-05  m3, N-Ovf=    1, TotDurOvf=    0.hrs}
R0010:C00286------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A2            25.50    2.388 No_date   28:03   40.97 .633     .000
      [XIMP=.42:TIMP=.52]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 566.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0010:C00287------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A2            25.50    2.388 No_date   28:03   40.97  n/a     .000
     Major System   /     1.0 02:A2-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A2-MN         25.50    1.818 No_date   27:57   40.97  n/a     .000
      {MjSysSto=.2896E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00288------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:TODD_MN2n      2.10     .268 No_date   27:58   44.92  n/a     .000
                   +      1.0 02:TODD_MN3n       .12     .016 No_date   28:00   44.90  n/a     .000
                   +      1.0 02:TODD_MJj        .09     .190 No_date   28:03   46.20  n/a     .000
                   +      1.0 02:TODD_P         3.06     .451 No_date   28:00   48.23  n/a     .000
                   +      1.0 02:TODD_ALL     112.91   10.943 No_date   28:05   44.71  n/a     .000
                   +      1.0 02:W_CLAR_MJn     1.77     .213 No_date   27:58   43.97  n/a     .000
                SUM=      1.0 01:TODD         120.03   11.699 No_date   28:03   44.79  n/a     .000
R0010:C00289------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:TODD         120.03   11.699 No_date   28:03   44.79  n/a     .000
      fname :TODD.0010
      remark:Total Flows at Todd Drain
#****************************************************************************
#    Todd Pond 3
#    - Rating curve obtained from Barrhaven South MSS modeling
#    - stantec 2007, Tributary Drainage Area to MSS Pond 3 = 193 ha
#****************************************************************************
R0010:C00290------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:TODD         120.03   11.699 No_date   28:03   44.79  n/a     .000
                out <=    1.0 01:MS_P3        120.03    6.151 No_date   28:20   44.79  n/a     .000
           overflow <=    1.0 03:P3-OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.2461E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00291------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:GreenB     54717.74   85.389 No_date   35:58   23.01  n/a     .000
                   +      1.0 02:MS_P3        120.03    6.151 No_date   28:20   44.79  n/a     .000
                   +      1.0 02:P3-OVF          .00     .000 No_date    0:00     .00  n/a     .000
                   +      1.0 02:TODD_MN2j       .00     .011 No_date   28:00   44.92  n/a     .000
                   +      1.0 02:A2-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                SUM=      1.0 01:SN_TO      54837.78   85.715 No_date   35:58   23.06  n/a     .000
R0010:C00292------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_TO      54837.78   85.715 No_date   35:58   23.06  n/a     .000
      fname :SN_TO.0010
      remark:Total Flows at Todd Drain
#
# Hydrograph from Todd Drain routed to Corrigan Drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 2462
# 2021-02-19 Change the slope from 0.033 % (as per Stantec Report 2007) to 0.05 % so the model will be more stable and g
R0010:C00293------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_TO      54837.78   85.715 No_date   35:58   23.06  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:N_TO       54837.78   85.046 No_date   37:15   23.06  n/a     .000
      [L/S/n=  280./ .050/.045]
      {Vmax=  .881:Dmax= 2.851}
R0010:C00294------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:N_TO       54837.78   85.046 No_date   37:15   23.06  n/a     .000
      fname :N_TO.0010
      remark:Total inflows at Station 2462
#****************************************************************************
#    Catchment CORRIG
#    - To Corrigan Drain (south of the Jock)
#    - Primarily Developed (medium density)
#    - JFSA JAN 2021, add Corrigan subcatchments as per IBI, July 2008
#****************************************************************************
R0010:C00295------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:corr1         15.87    2.113 No_date   28:01   48.23 .746     .000
      [XIMP=.63:TIMP=.63]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 325.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0010:C00296------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:corr1         15.87    2.113 No_date   28:01   48.23  n/a     .000
     Major System   /     1.0 02:corr1-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:corr1-MN      15.87    1.818 No_date   28:09   48.38  n/a     .000
      {MjSysSto=.8936E+02, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00297------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:corr2         12.47     .209 No_date   29:11   26.85 .415     .000
      [CN= 77.0: N= 3.00: Tp= 1.10]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0010:C00298------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A1-Corrig     15.75    1.640 No_date   28:02   40.97 .633     .000
      [XIMP=.42:TIMP=.52]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 324.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0010:C00299------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A1-Corrig     15.75    1.640 No_date   28:02   40.97  n/a     .000
     Major System   /     1.0 02:A1-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A1-MN         15.75    1.640 No_date   28:02   40.97  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00300------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:B1             2.77     .072 No_date   28:09   16.64 .257     .000
      [CN= 56.0: N= 3.00: Tp=  .23]
      [IaREC= 4.00: SMIN= 79.69: SMAX=531.24: SK= .010]
      [InterEventTime=  12.00]
R0010:C00301------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A4             1.27     .178 No_date   28:00   48.63 .752     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 253.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0010:C00302------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A4             1.27     .178 No_date   28:00   48.63  n/a     .000
     Major System   /     1.0 02:A4-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A4-MN          1.27     .178 No_date   28:00   48.63  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00303------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:A1-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                   +      1.0 02:A1-MN         15.75    1.640 No_date   28:02   40.97  n/a     .000
                   +      1.0 02:corr1-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                   +      1.0 02:corr1-MN      15.87    1.818 No_date   28:09   48.38  n/a     .000
                   +      1.0 02:corr2         12.47     .209 No_date   29:11   26.85  n/a     .000
                   +      1.0 02:B1             2.77     .072 No_date   28:09   16.64  n/a     .000
                   +      1.0 02:A4-MN          1.27     .178 No_date   28:00   48.63  n/a     .000
                SUM=      1.0 01:MH101         48.13    3.734 No_date   28:02   38.56  n/a     .000
R0010:C00304------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH101         48.13    3.734 No_date   28:02   38.56  n/a     .000
      fname :MH101.0010
      remark:Total Flows at MH101
R0010:C00305------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH101         48.13    3.734 No_date   28:02   38.56  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:101-102       48.13    3.662 No_date   28:03   38.56  n/a     .000
      [L/S/n=  368./ .540/.013]
      {Vmax= 3.084:Dmax= 1.088}
      [Din= 1.05:Dused= 1.33}
R0010:C00306------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:A2-MN         25.50    1.818 No_date   27:57   40.97  n/a     .000
                   +      1.0 02:101-102       48.13    3.662 No_date   28:03   38.56  n/a     .000
                SUM=      1.0 01:MH102         73.63    5.480 No_date   28:03   39.39  n/a     .000
R0010:C00307------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH102         73.63    5.480 No_date   28:03   39.39  n/a     .000
      fname :MH102.0010
      remark:Total Flows at MH102
R0010:C00308------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A5             1.60     .236 No_date   28:01   51.11 .790     .000
      [XIMP=.71:TIMP=.71]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 300.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0010:C00309------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:A4-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                   +      1.0 02:A5             1.60     .236 No_date   28:01   51.11  n/a     .000
                SUM=      1.0 01:A5T            1.60     .236 No_date   28:01   51.11  n/a     .000
R0010:C00310------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A5T            1.60     .236 No_date   28:01   51.11  n/a     .000
     Major System   /     1.0 02:A5-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A5-MN          1.60     .236 No_date   28:01   51.11  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00311------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH102         73.63    5.480 No_date   28:03   39.39  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:102-103       73.63    5.291 No_date   28:06   39.39  n/a     .000
      [L/S/n=  504./ .280/.013]
      {Vmax= 2.654:Dmax= 1.421}
      [Din= 1.50:Dused= 1.73}
R0010:C00312------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:102-103       73.63    5.291 No_date   28:06   39.39  n/a     .000
                   +      1.0 02:A5-MN          1.60     .236 No_date   28:01   51.11  n/a     .000
                SUM=      1.0 01:MH103         75.23    5.462 No_date   28:05   39.64  n/a     .000
R0010:C00313------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH103         75.23    5.462 No_date   28:05   39.64  n/a     .000
      fname :MH103.0010
      remark:Total Flows at MH103
R0010:C00314------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH103         75.23    5.462 No_date   28:05   39.64  n/a     .000
     [RDT= 1.00] out<-    1.0 01:103-104       75.23    5.382 No_date   28:07   39.64  n/a     .000
      [L/S/n=  438./ .460/.013]
      {Vmax= 3.265:Dmax= 1.205}
      [Din= 1.65:Dused= 1.65}
R0010:C00315------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A6             1.56     .232 No_date   28:00   51.11 .790     .000
      [XIMP=.71:TIMP=.71]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 280.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0010:C00316------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:A5-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                   +      1.0 02:A6             1.56     .232 No_date   28:00   51.11  n/a     .000
                SUM=      1.0 01:A6T            1.56     .232 No_date   28:00   51.11  n/a     .000
R0010:C00317------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A6T            1.56     .232 No_date   28:00   51.11  n/a     .000
     Major System   /     1.0 02:A6-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A6-MN          1.56     .232 No_date   28:00   51.11  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00318------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:A6-MN          1.56     .232 No_date   28:00   51.11  n/a     .000
                   +      1.0 02:103-104       75.23    5.382 No_date   28:07   39.64  n/a     .000
                   +      1.0 02:TODD_MJn      30.14    3.314 No_date   28:00   46.20  n/a     .000
                SUM=      1.0 01:MH104        106.93    8.816 No_date   28:05   41.66  n/a     .000
R0010:C00319------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH104        106.93    8.816 No_date   28:05   41.66  n/a     .000
      fname :MH104.0010
      remark:Total Flows at MH104
R0010:C00320------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:B2            12.31    1.229 No_date   28:02   41.19 .637     .000
      [XIMP=.41:TIMP=.54]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 417.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0010:C00321------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:B2            12.31    1.229 No_date   28:02   41.19  n/a     .000
     Major System   /     1.0 02:B2-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:B2-MN         12.31    1.029 No_date   27:58   41.28  n/a     .000
      {MjSysSto=.7604E+02, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00322------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:B2-MN         12.31    1.029 No_date   27:58   41.28  n/a     .000
     [RDT= 1.00] out<-    1.0 01:315-333       12.31    1.019 No_date   28:12   41.28  n/a     .000
      [L/S/n=  254./ .100/.013]
      {Vmax= 1.220:Dmax=  .838}
      [Din= 1.20:Dused= 1.20}
R0010:C00323------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:B3             5.59     .579 No_date   28:02   41.19 .637     .000
      [XIMP=.41:TIMP=.54]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 345.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0010:C00324------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:B3             5.59     .579 No_date   28:02   41.19  n/a     .000
     Major System   /     1.0 02:B3-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:B3-MN          5.59     .459 No_date   27:57   41.35  n/a     .000
      {MjSysSto=.4795E+02, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00325------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:B3-MN          5.59     .459 No_date   27:57   41.35  n/a     .000
                   +      1.0 02:315-333       12.31    1.019 No_date   28:12   41.28  n/a     .000
                SUM=      1.0 01:MH333         17.90    1.478 No_date   28:12   41.30  n/a     .000
R0010:C00326------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH333         17.90    1.478 No_date   28:12   41.30  n/a     .000
```

```
      fname :MH333.0010
      remark:Total Flows at MH333
R0010:C00327------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH333         17.90    1.478 No_date   28:12   41.30  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:333-335       17.90    1.450 No_date   28:14   41.30  n/a     .000
      [L/S/n=  251./ .100/.013]
      {Vmax= 1.300:Dmax= 1.054}
      [Din= 1.20:Dused= 1.28}
R0010:C00328------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:333-335       17.90    1.450 No_date   28:14   41.30  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:335-338       17.90    1.447 No_date   28:14   41.30  n/a     .000
      [L/S/n=  185./ .100/.013]
      {Vmax= 1.294:Dmax= 1.047}
      [Din= 1.20:Dused= 1.28}
R0010:C00329------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:335-338       17.90    1.447 No_date   28:14   41.30  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:338-340       17.90    1.418 No_date   28:15   41.30  n/a     .000
      [L/S/n=  233./ .100/.013]
      {Vmax= 1.325:Dmax=  .963}
      [Din= 1.35:Dused= 1.35}
R0010:C00330------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:B4             7.60     .768 No_date   28:02   41.19 .637     .000
      [XIMP=.41:TIMP=.54]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 388.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0010:C00331------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:B4             7.60     .768 No_date   28:02   41.19  n/a     .000
     Major System   /     1.0 02:B4-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:B4-MN          7.60     .655 No_date   27:58   41.31  n/a     .000
      {MjSysSto=.3770E+02, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00332------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:338-340       17.90    1.418 No_date   28:15   41.30  n/a     .000
                   +      1.0 02:B4-MN          7.60     .655 No_date   27:58   41.31  n/a     .000
                SUM=      1.0 01:MH340         25.50    2.022 No_date   28:12   41.30  n/a     .000
R0010:C00333------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH340         25.50    2.022 No_date   28:12   41.30  n/a     .000
      fname :MH340.0010
      remark:Total Flows at MH340
R0010:C00334------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH340         25.50    2.022 No_date   28:12   41.30  n/a     .000
     [RDT= 1.00] out<-    1.0 01:340-104       25.50    1.986 No_date   28:12   41.30  n/a     .000
      [L/S/n=  240./ .150/.013]
      {Vmax= 1.706:Dmax=  .895}
      [Din= 1.65:Dused= 1.65}
R0010:C00335------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:340-104       25.50    1.986 No_date   28:12   41.30  n/a     .000
                   +      1.0 02:MH104        106.93    8.816 No_date   28:05   41.66  n/a     .000
                SUM=      1.0 01:MH104T       132.43   10.636 No_date   28:05   41.59  n/a     .000
R0010:C00336------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH104T       132.43   10.636 No_date   28:05   41.59  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:104-105      132.43   10.007 No_date   28:06   41.59  n/a     .000
      [L/S/n=  380./ .100/.013]
      {Vmax= 2.071:Dmax= 1.952}
      {HGTH= 2.30:WDTH= 2.63}
R0010:C00337------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:B5             2.20     .291 No_date   28:00   45.32 .701     .000
      [XIMP=.57:TIMP=.57]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 187.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0010:C00338------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:B5             2.20     .291 No_date   28:00   45.32  n/a     .000
     Major System   /     1.0 02:B5-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:B5-MN          2.20     .260 No_date   27:57   45.39  n/a     .000
      {MjSysSto=.6886E+01, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00339------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A8              .96     .151 No_date   28:00   51.11 .790     .000
      [XIMP=.71:TIMP=.71]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 186.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0010:C00340------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:A6-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                   +      1.0 02:A8              .96     .151 No_date   28:00   51.11  n/a     .000
                SUM=      1.0 01:A8T             .96     .151 No_date   28:00   51.11  n/a     .000
R0010:C00341------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A8T             .96     .151 No_date   28:00   51.11  n/a     .000
     Major System   /     1.0 02:A8-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A8-MN           .96     .151 No_date   28:00   51.11  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00342------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:104-105      132.43   10.007 No_date   28:06   41.59  n/a     .000
                   +      1.0 02:B5-MN          2.20     .260 No_date   27:57   45.39  n/a     .000
                   +      1.0 02:A8-MN           .96     .151 No_date   28:00   51.11  n/a     .000
                   +      1.0 02:TODD_MN3j       .00     .000 No_date   28:00   44.90  n/a     .000
                SUM=      1.0 01:MH105        135.59   10.343 No_date   28:05   41.72  n/a     .000
R0010:C00343------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH105        135.59   10.343 No_date   28:05   41.72  n/a     .000
      fname :MH105.0010
      remark:Total Flows at MH105
R0010:C00344------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
 *  DIVERT HYD      ->    1.0 01:A8-MJ           .00     .000 No_date    0:00     .00  n/a     .000
           diverted <=    1.0 02:A8-MJ-JR        .00     .000 No_date    0:00     .00  n/a     .000
           diverted <=    1.0 03:A8-MJ-B6        .00     .000 No_date    0:00     .00  n/a     .000
R0010:C00345------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    DIVERT HYD      ->    1.0 01:MH105        135.59   10.343 No_date   28:05   41.72  n/a     .000
           diverted <=    1.0 02:MH105-JR      28.70    7.335 No_date   28:05   41.72  n/a     .000
           diverted <=    1.0 03:MH105-B6     106.90    3.008 No_date   28:05   41.72  n/a     .000
R0010:C00346------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:B7             7.19     .792 No_date   28:01   41.19 .637     .000
      [XIMP=.41:TIMP=.54]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 211.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0010:C00347------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:B4-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                   +      1.0 02:B7             7.19     .792 No_date   28:01   41.19  n/a     .000
                SUM=      1.0 01:B7-B4MJ        7.19     .792 No_date   28:01   41.19  n/a     .000
R0010:C00348------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:B7-B4MJ        7.19     .792 No_date   28:01   41.19  n/a     .000
     Major System   /     1.0 02:B7R-MJ          .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:B7R-MN         7.19     .629 No_date   27:55   41.31  n/a     .000
      {MjSysSto=.5641E+02, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00349------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:B7R-MN         7.19     .629 No_date   27:55   41.31  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:360-106A       7.19     .628 No_date   28:11   41.31  n/a     .000
      [L/S/n=  167./ .100/.013]
      {Vmax= 1.089:Dmax=  .665}
      [Din= 1.05:Dused= 1.05}
R0010:C00350------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:B6             3.29     .376 No_date   28:00   41.19 .637     .000
      [XIMP=.41:TIMP=.54]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 148.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0010:C00351------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:B6             3.29     .376 No_date   28:00   41.19  n/a     .000
     Major System   /     1.0 02:B6-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:B6-MN          3.29     .064 No_date   27:36   41.22  n/a     .000
      {MjSysSto=.3813E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00352------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:EX-LAND       32.50    3.367 No_date   28:02   41.86 .647     .000
      [XIMP=.50:TIMP=.50]
      [LOSS= 2 :CN= 74.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 465.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 36.67: SMAX=244.49: SK= .010]
R0010:C00353------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:EX-LAND       32.50    3.367 No_date   28:02   41.86  n/a     .000
     Major System   /     1.0 02:EX-LAND-MJ      .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:EX-LAND-MN   32.50    2.275 No_date   27:55   41.99  n/a     .000
      {MjSysSto=.5949E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00354------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:B7R-MJ          .00     .000 No_date    0:00     .00  n/a     .000
                   +      1.0 02:EX-LAND-MJ      .00     .000 No_date    0:00     .00  n/a     .000
                   +      1.0 02:B5-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                   +      1.0 02:B6-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                   +      1.0 02:B6-MN          3.29     .064 No_date   27:36   41.22  n/a     .000
                   +      1.0 02:A8-MJ-B6        .00     .000 No_date    0:00     .00  n/a     .000
                SUM=      1.0 01:B6-B7ExMJ      3.29     .064 No_date   27:36   41.22  n/a     .000
R0010:C00355------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:B6-B7ExMJ      3.29     .064 No_date   27:36   41.22  n/a     .000
     Major System   /     1.0 02:B6R-MJ          .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:B6R-MN         3.29     .064 No_date   27:36   41.22  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00356------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH105-B6     106.90    3.008 No_date   28:05   41.72  n/a     .000
     [RDT= 1.00] out<-    1.0 01:105-106A     106.90    3.006 No_date   28:12   41.72  n/a     .000
      [L/S/n=  208./ .100/.013]
      {Vmax= 1.597:Dmax= 1.249}
      [Din= 1.80:Dused= 1.80}
R0010:C00357------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:360-106A       7.19     .628 No_date   28:11   41.31  n/a     .000
                   +      1.0 02:105-106A     106.90    3.006 No_date   28:12   41.72  n/a     .000
                   +      1.0 02:B6R-MN         3.29     .064 No_date   27:36   41.22  n/a     .000
                   +      1.0 02:B6R-MJ          .00     .000 No_date    0:00     .00  n/a     .000
                SUM=      1.0 01:MH106A       117.38    3.698 No_date   28:11   41.68  n/a     .000
R0010:C00358------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH106A       117.38    3.698 No_date   28:11   41.68  n/a     .000
      fname :MH106A.0010
      remark:Total Flows at MH106A
R0010:C00359------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH106A       117.38    3.698 No_date   28:11   41.68  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:106A-106     117.38    3.659 No_date   28:06   41.68  n/a     .000
      [L/S/n=  190./ .100/.013]
      {Vmax= 1.635:Dmax= 1.487}
      [Din= 1.80:Dused= 1.81}
R0010:C00360------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A9             2.44     .365 No_date   28:00   51.11 .790     .000
      [XIMP=.71:TIMP=.71]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 262.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0010:C00361------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A9             2.44     .365 No_date   28:00   51.11  n/a     .000
     Major System   /     1.0 02:A9-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A9-MN          2.44     .365 No_date   28:00   51.11  n/a     .000
R0010:C00362------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:106A-106     117.38    3.659 No_date   28:06   41.68  n/a     .000
                   +      1.0 02:A9-MN          2.44     .365 No_date   28:00   51.11  n/a     .000
                SUM=      1.0 01:MH106        119.82    3.992 No_date   28:02   41.87  n/a     .000
R0010:C00363------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH106        119.82    3.992 No_date   28:02   41.87  n/a     .000
      fname :MH106.0010
      remark:Total Flows at MH106
R0010:C00364------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH106        119.82    3.992 No_date   28:02   41.87  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:106-107      119.82    3.962 No_date   28:03   41.87  n/a     .000
      [L/S/n=  123./ .100/.013]
      {Vmax= 1.666:Dmax= 1.530}
      [Din= 1.80:Dused= 1.86}
R0010:C00365------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A10            4.14     .416 No_date   28:01   38.46 .595     .000
      [XIMP=.35:TIMP=.47]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 183.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0010:C00366------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A10            4.14     .416 No_date   28:01   38.46  n/a     .000
     Major System   /     1.0 02:A10-MJ          .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A10-MN         4.14     .310 No_date   27:55   38.48  n/a     .000
      {MjSysSto=.4172E+02, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00367------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A11           10.61    1.251 No_date   28:01   45.36 .701     .000
      [XIMP=.53:TIMP=.62]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 379.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0010:C00368------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A11           10.61    1.251 No_date   28:01   45.36  n/a     .000
     Major System   /     1.0 02:A11-MJ          .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A11-MN        10.61     .993 No_date   27:56   45.38  n/a     .000
      {MjSysSto=.1016E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00369------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:106-107      119.82    3.962 No_date   28:03   41.87  n/a     .000
                   +      1.0 02:A10-MN         4.14     .310 No_date   27:55   38.48  n/a     .000
                   +      1.0 02:A11-MN        10.61     .993 No_date   27:56   45.38  n/a     .000
                SUM=      1.0 01:MH107        134.57    5.265 No_date   28:03   42.04  n/a     .000
R0010:C00370------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH107        134.57    5.265 No_date   28:03   42.04  n/a     .000
      fname :MH107.0010
      remark:Total Flows at MH107
R0010:C00371------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH107        134.57    5.265 No_date   28:03   42.04  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:107-119      134.57    5.251 No_date   28:05   42.04  n/a     .000
      [L/S/n=  114./ .120/.013]
      {Vmax= 1.912:Dmax= 1.640}
      [Din= 1.80:Dused= 2.00}
R0010:C00372------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:107-119      134.57    5.251 No_date   28:05   42.04  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:119-108      134.57    5.248 No_date   28:06   42.04  n/a     .000
      [L/S/n=   66./ .120/.013]
      {Vmax= 1.911:Dmax= 1.639}
      [Din= 1.80:Dused= 2.00}
R0010:C00373------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A12           12.29    1.385 No_date   28:01   41.19 .637     .000
      [XIMP=.41:TIMP=.54]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 183.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0010:C00374------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A12           12.29    1.385 No_date   28:01   41.19  n/a     .000
     Major System   /     1.0 02:A12-MJ          .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A12-MN        12.29    1.029 No_date   27:54   41.27  n/a     .000
      {MjSysSto=.1401E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00375------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A13            2.59     .368 No_date   28:01   51.11 .790     .000
      [XIMP=.71:TIMP=.71]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 379.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0010:C00376------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A13            2.59     .368 No_date   28:01   51.11  n/a     .000
     Major System   /     1.0 02:A13-MJ          .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A13-MN         2.59     .368 No_date   28:01   51.11  n/a     .000
R0010:C00377------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:Pond-Block     2.94     .309 No_date   28:00   38.90 .601     .000
      [XIMP=.41:TIMP=.41]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 183.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0010:C00378------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:119-108      134.57    5.248 No_date   28:06   42.04  n/a     .000
                   +      1.0 02:A13-MN         2.59     .368 No_date   28:01   51.11  n/a     .000
                   +      1.0 02:A12-MN        12.29    1.029 No_date   27:54   41.27  n/a     .000
                SUM=      1.0 01:MH108        149.45    6.598 No_date   28:04   42.14  n/a     .000
R0010:C00379------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH108        149.45    6.598 No_date   28:04   42.14  n/a     .000
      fname :MH108.0010
      remark:Total Flows at MH108
R0010:C00380------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH108        149.45    6.598 No_date   28:04   42.14  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:108-116      149.45    6.590 No_date   28:05   42.14  n/a     .000
      [L/S/n=   77./ .130/.013]
      {Vmax= 2.085:Dmax= 1.759}
      [Din= 1.80:Dused= 2.14}
R0010:C00381------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:108-116      149.45    6.590 No_date   28:05   42.14  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:116-corrig   149.45    6.577 No_date   28:06   42.14  n/a     .000
      [L/S/n=   80./ .130/.013]
      {Vmax= 2.084:Dmax= 1.758}
      [Din= 1.80:Dused= 2.14}
R0010:C00382------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:116-corrig   149.45    6.577 No_date   28:06   42.14  n/a     .000
                   +      1.0 02:Pond-Block     2.94     .309 No_date   28:00   38.90  n/a     .000
                SUM=      1.0 01:Corrigan     152.39    6.779 No_date   28:05   42.08  n/a     .000
R0010:C00383------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:Corrigan     152.39    6.779 No_date   28:05   42.08  n/a     .000
      fname :Corrigan.0010
      remark:HYD_COMMENT=["Total Flows at Corrigan Pond]
R0010:C00384------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:Corrigan     152.39    6.779 No_date   28:05   42.08  n/a     .000
                out <=    1.0 01:Co-P         152.39    6.100 No_date   28:15   42.07  n/a     .000
           overflow <=    1.0 03:Co-P-OVF        .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.1015E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00385------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:Co-P-OVF        .00     .000 No_date    0:00     .00  n/a     .000
                   +      1.0 02:Co-P         152.39    6.100 No_date   28:15   42.07  n/a     .000
                   +      1.0 02:N_TO       54837.78   85.046 No_date   37:15   23.06  n/a     .000
                   +      1.0 02:MH105-JR      28.70    7.335 No_date   28:05   41.72  n/a     .000
                   +      1.0 02:A8-MJ-JR        .00     .000 No_date    0:00     .00  n/a     .000
                   +      1.0 02:A9-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                   +      1.0 02:A10-MJ          .00     .000 No_date    0:00     .00  n/a     .000
                   +      1.0 02:A11-MJ          .00     .000 No_date    0:00     .00  n/a     .000
                   +      1.0 02:A12-MJ          .00     .000 No_date    0:00     .00  n/a     .000
                   +      1.0 02:A13-MJ          .00     .000 No_date    0:00     .00  n/a     .000
                SUM=      1.0 01:corrig     55018.86   85.401 No_date   37:15   23.12  n/a     .000
R0010:C00386------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:corrig     55018.86   85.401 No_date   37:15   23.12  n/a     .000
      fname :corrig.0010
      remark:Total Flows at Corrigan Pond
#****************************************************************************
#    Corrigan Pond 1
#    - Rating curve obtained from Barrhaven South MSS modeling
#    - Tributary Drainage Area to MSS Pond 1 = 145 ha
#****************************************************************************
#
# Hydrograph from Corrigan Drain routed to Jockvale Road
# Channel X-Section obtained from RVCA Hydraulic Model - Station 2462
#
R0010:C00387------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:corrig     55018.86   85.401 No_date   37:15   23.12  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N_MI       55018.86   85.374 No_date   37:18   23.12  n/a     .000
      [L/S/n=  580./ .445/.045]
      {Vmax= 1.783:Dmax= 1.624}
#****************************************************************************
#    Catchment MILLS
#    - To SWM Facility north of the Jock
#    - Primarily residental development
#****************************************************************************
R0010:C00388------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:MILLS        175.99   12.212 No_date   28:07   36.76 .568     .000
      [XIMP=.38:TIMP=.38]
      [LOSS= 2 :CN= 74.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI=1118.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 36.67: SMAX=244.49: SK= .010]
#****************************************************************************
#    Chapman Mills SWM Pond
```

```
#    - Rating curve obtained from CCL hydraulic modeling
#*****************************************************************************
R0010:C00389-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:MILLS        175.99   12.212 No_date   28:07   36.76  n/a     .000
                out <=    1.0 01:MILL_P       175.99    4.030 No_date   28:43   36.76  n/a     .000
           overflow <=    1.0 03:MIL-OV          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.2299E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00390-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N_MI       55018.86   85.374 No_date   37:18   23.12  n/a     .000
                     +    1.0 02:MIL-OV          .00     .000 No_date    0:00     .00  n/a     .000
                     +    1.0 02:MILL_P       175.99    4.030 No_date   28:43   36.76  n/a     .000
                  SUM=    1.0 01:SN_MI      55194.85   85.786 No_date   37:17   23.16  n/a     .000
R0010:C00391-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_MI      55194.85   85.786 No_date   37:17   23.16  n/a     .000
      fname :SN_MI.0010
      remark:Total Flows at Jockvale Road
#
# Hydrograph from Jockvale Road routed to Heart's Desire
# Channel X-Section obtained from RVCA Hydraulic Model - Station 689
#
R0010:C00392-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_MI      55194.85   85.786 No_date   37:17   23.16  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N_DE       55194.85   85.515 No_date   37:21   23.16  n/a     .000
      [L/S/n= 1962./ .223/.045]
      {Vmax= 1.390:Dmax= 2.066}
#*****************************************************************************
#    Catchment DESIRE
#    - To Jock River (north of the Jock)
#    - Rural-estate subdivision (Heart's Desire Community)
#*****************************************************************************
R0010:C00393-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:DESIRE        23.78    1.694 No_date   28:03   32.93 .509     .000
      [XIMP=.25:TIMP=.25]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 400.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
#*****************************************************************************
#    Catchment JOCKVA
#    - To Jockvale SWM Facility
#    - Residential development & golf course
#    - JFSA 2021-01-11 update JOCKVA after updating CORRIG as per IBI GROUP, July 2008.
#      JOCKVA area became 225.13 ha instead of 257.63 ha. JOCKVA separated into two areas JOCKVA and EX-LAND 32.5 ha as
#*****************************************************************************
R0010:C00394-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:JOCKVA       225.13   17.670 No_date   28:08   41.86 .647     .000
      [XIMP=.50:TIMP=.50]
      [LOSS= 2 :CN= 74.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI=1311.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 36.67: SMAX=244.49: SK= .010]
R0010:C00395-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:EX-LAND-MN    32.50    2.275 No_date   27:55   41.99  n/a     .000
                     +    1.0 02:JOCKVA       225.13   17.670 No_date   28:08   41.86  n/a     .000
                     +    1.0 02:B2-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                     +    1.0 02:B3-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                  SUM=    1.0 01:JOCKVA-TO    257.63   19.945 No_date   28:08   41.88  n/a     .000
R0010:C00396-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:JOCKVA-TO    257.63   19.945 No_date   28:08   41.88  n/a     .000
      fname :JOCKVA-TO.0010
      remark:Total Flows at KB first pond
#*****************************************************************************
#    Jockvale SWM Facility
#    - Rating curve obtained from Jockvale Servicing Study (CCL 1999)
#*****************************************************************************
R0010:C00397-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:JOCKVA-TO    257.63   19.945 No_date   28:08   41.88  n/a     .000
                out <=    1.0 01:JOCK_P       257.63    6.542 No_date   28:42   41.88  n/a     .000
           overflow <=    1.0 03:JO-OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.4673E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00398-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N_DE       55194.85   85.515 No_date   37:21   23.16  n/a     .000
                     +    1.0 02:DESIRE        23.78    1.694 No_date   28:03   32.93  n/a     .000
                     +    1.0 02:JO-OVF          .00     .000 No_date    0:00     .00  n/a     .000
                     +    1.0 02:JOCK_P       257.63    6.542 No_date   28:42   41.88  n/a     .000
                  SUM=    1.0 01:SN_DE      55476.26   86.165 No_date   37:21   23.26  n/a     .000
R0010:C00399-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_DE      55476.26   86.165 No_date   37:21   23.26  n/a     .000
      fname :SN_DE.0010
      remark:Total Flows at Heart's Desire
#
# Hydrograph from Heart's Desire routed to Rideau River
# Channel X-Section obtained from RVCA Hydraulic Model - Station 0
#
R0010:C00400-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_DE      55476.26   86.165 No_date   37:21   23.26  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N1         55476.26   86.183 No_date   37:18   23.26  n/a     .000
      [L/S/n=  563./ .967/.045]
      {Vmax= 1.785:Dmax= 1.035}
#*****************************************************************************
#    Catchment S-2
#    - To Jock River (north and south)
#    - Undeveloped floodplain and river
#*****************************************************************************
R0010:C00401-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:S-2          102.94    2.957 No_date   28:20   23.57 .364     .000
      [CN= 72.0: N= 3.00: Tp=  .40]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
R0010:C00402-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N1         55476.26   86.183 No_date   37:18   23.26  n/a     .000
                     +    1.0 02:S-2          102.94    2.957 No_date   28:20   23.57  n/a     .000
                  SUM=    1.0 01:SN_N1      55579.20   86.348 No_date   37:18   23.26  n/a     .000
R0010:C00403-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_N1      55579.20   86.348 No_date   37:18   23.26  n/a     .000
      fname :SN_N1.0010
      remark:Total Flows at Rideau River
#############################################################################
  ** END OF RUN :   24

***************************************************************************************************

 RUN#:COMMAND#
R0025:C00001---------------------------------------------------------------------------------------
     START
      [TZERO =    .00 hrs on        0]
      [METOUT=   2    (1=imperial, 2=metric output)]
      [NSTORM=   1 ]
      [NRUN  = 0025 ]
#*****************************************************************************
#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
#*****************************************************************************
#  Project Name: [Jock River]    Project Number: [1474-16]
#  Date         : 04-03-2021
#  Modeller     : [M.M.]
#  Company      : JFSAinc.
#  License #    :  2549237
#*****************************************************************************
# CALIBRATION OF SUMMER MODEL PARAMETERS
# USING CONTINUOUS SIMULATIONS
# Rainfall data from JFSA raingauge installed at site + other gauges by the City
# Use data collected from May 1st to July 14, 2003
# 2020-11-30 change TMJSTO in COMPUTE DUALHYD (TMJSTO = 0.1 instead of 0.0001)
# 2020-12-01 correct pond curve values
# 2020-12-01 change W_CLAR_BRAZ XIMP to 0.55, SLPI=[0.5](%) (impervious slope), and LGI up to 700m
# 2021-02-19 Change the slope for ROUTE CHANNEL Station 2462 (NHYDout=["N_TO"] ,NHYDin=["SN_TO"]) from 0.033 % (as per S
# 2021-02-19 Change the slope for ROUTE CHANNEL Station 5002 (NHYDout=["N_WC"] ,NHYDin=["SN_CE"]) from 0.01 % (as per St
# ---------------------------------------------------------------------------
R0025:C00002---------------------------------------------------------------------------------------
     READ STORM
      Filename = storm.001
      Comment  = Pluie SCS de 24 hres 1:25 ans pour Ottawa CDA
      [SDT=10.00:SDUR=  24.00:PTOT=  74.39]
R0025:C00003---------------------------------------------------------------------------------------
     MODIFY STORM
      [RFACT=  1.00:TSHIFT= 960.00 min]
      [SDT=10.00:SDUR=  40.00:PTOT=  74.39]
R0025:C00004---------------------------------------------------------------------------------------
     DEFAULT VALUES
      Filename = T:\PROJ\1474-16\Design\20201026-QuantityControlAnalysis\SWMHYMO\SMR-Model\updated3\CitiGate.DEF
      ICASEdv  = 1 (read and print data)
      FileTitle= File comment: [Based onvarious calibration exercises in Onta
                 THE FOLLOWING PARAMETERS ARE USED IN THE DESIGN STANDHYD COM
      Horton's infiltration equation parameters:
      [Fo= 76.20 mm/hr] [Fc=13.20 mm/hr] [DCAY= 4.14 /hr] [F=  .00 mm]
      Parameters for PERVIOUS surfaces in STANDHYD:
      [IAper=   4.67 mm] [LGP=50.00 m] [MNP= .250]
      Parameters for IMPERVIOUS surfaces in STANDHYD:
      [IAimp=   1.57 mm] [CLI= 1.50]   [MNI= .013]
      Parameters used in NASHYD:
      [Ia=   4.67 mm] [N= 3.00]
      Average monthly Pan Evaporation data in    (mm)
   JAN   FEB   MAR   APR   MAY   JUN   JUL   AUG   SEP   OCT   NOV   DEC
   .00   .00   .00   .00   .00   .00   .00   .00   .00   .00   .00   .00
      Average monthly Potential Evapotranspiration in    (mm)
   JAN   FEB   MAR   APR   MAY   JUN   JUL   AUG   SEP   OCT   NOV   DEC
   .00   .00   .00   .00   .00   .00   .00   .00   .00   .00   .00   .00
R0025:C00005---------------------------------------------------------------------------------------
     COMPUTE API
      [APIini= 50.00: APIkdy= .8500: APIkdt= .9989]
      {APImax=106.76: APIavg= 65.09: APImin= 44.87}
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.32
R0025:C00006-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:JR_HW       3680.00   15.500 No_date   36:57   25.80 .347     .000
      [CN= 64.0: N= 3.00: Tp= 7.13]
      [IaREC= 4.00: SMIN= 57.05: SMAX=380.32: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.32
R0025:C00007-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_13        971.00    5.778 No_date   32:34   24.02 .323     .000
      [CN= 61.0: N= 3.00: Tp= 3.76]
      [IaREC= 4.00: SMIN= 64.50: SMAX=430.01: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.80
R0025:C00008-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:JR_GWM      3074.00    7.521 No_date   39:59   20.65 .278     .000
      [CN= 55.0: N= 3.00: Tp=11.33]
      [IaREC= 4.00: SMIN= 83.24: SMAX=554.96: SK= .010]
      [InterEventTime=  12.00]
R0025:C00009-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:JR_ASH      1781.00   14.166 No_date   32:40   31.50 .423     .000
      [CN= 72.0: N= 3.00: Tp= 3.91]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
R0025:C00010-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_11        500.00    7.521 No_date   29:22   27.01 .363     .000
      [CN= 66.0: N= 3.00: Tp= 1.24]
      [IaREC= 4.00: SMIN= 52.62: SMAX=350.79: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.80
R0025:C00011-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:NN_CK       1917.00   10.351 No_date   34:27   27.01 .363     .000
      [CN= 66.0: N= 3.00: Tp= 5.29]
      [IaREC= 4.00: SMIN= 52.62: SMAX=350.79: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.52
R0025:C00012-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_10       5666.00   27.457 No_date   37:54   31.50 .423     .000
      [CN= 72.0: N= 3.00: Tp= 8.00]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.75
R0025:C00013-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:KG_CK       8376.00   26.276 No_date   39:59   27.01 .363     .000
      [CN= 66.0: N= 3.00: Tp=11.66]
      [IaREC= 4.00: SMIN= 52.62: SMAX=350.79: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.68
R0025:C00014-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_9        1132.00   11.752 No_date   30:54   30.18 .406     .000
      [CN= 70.0: N= 3.00: Tp= 2.51]
      [IaREC= 4.00: SMIN= 43.07: SMAX=287.10: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.82
R0025:C00015-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:NC_CK       4464.00   13.075 No_date   39:59   24.61 .331     .000
      [CN= 62.0: N= 3.00: Tp=11.32]
      [IaREC= 4.00: SMIN= 61.90: SMAX=412.66: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.80
R0025:C00016-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_8         131.00    2.266 No_date   28:57   25.20 .339     .000
      [CN= 63.0: N= 3.00: Tp=  .90]
      [IaREC= 4.00: SMIN= 59.42: SMAX=396.11: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.65
R0025:C00017-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:HB_DR       3854.00   15.333 No_date   38:34   27.01 .363     .000
      [CN= 66.0: N= 3.00: Tp= 8.42]
      [IaREC= 4.00: SMIN= 52.62: SMAX=350.79: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.82
R0025:C00018-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_7        3197.00   11.663 No_date   36:24   21.75 .292     .000
      [CN= 57.0: N= 3.00: Tp= 6.65]
      [IaREC= 4.00: SMIN= 76.32: SMAX=508.81: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.75
R0025:C00019-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_6         165.00    1.076 No_date   33:03   27.63 .371     .000
      [CN= 67.0: N= 3.00: Tp= 4.18]
      [IaREC= 4.00: SMIN= 50.55: SMAX=336.97: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.67
R0025:C00020-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:VG_DR       1332.00    7.882 No_date   35:14   31.50 .423     .000
      [CN= 72.0: N= 3.00: Tp= 5.95]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
R0025:C00021-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_5         224.00    6.882 No_date   28:45   35.66 .479     .000
      [CN= 77.0: N= 3.00: Tp=  .75]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.20
R0025:C00022-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:FL_CK       4945.00   37.664 No_date   33:18   32.85 .442     .000
      [CN= 74.0: N= 3.00: Tp= 4.45]
      [IaREC= 4.00: SMIN= 36.67: SMAX=244.49: SK= .010]
      [InterEventTime=  12.00]
R0025:C00023-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_5A2        20.00     .798 No_date   28:35   39.36 .529     .000
      [CN= 81.0: N= 3.00: Tp=  .62]
      [IaREC= 4.00: SMIN= 25.21: SMAX=168.09: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.61
R0025:C00024-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_5A1      1412.00    7.480 No_date   37:50   34.24 .460     .000
      [CN= 75.0: N= 3.00: Tp= 8.00]
      [IaREC= 4.00: SMIN= 33.81: SMAX=225.43: SK= .010]
      [InterEventTime=  12.00]
R0025:C00025-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_4         585.00   10.942 No_date   29:56   39.36 .529     .000
      [CN= 81.0: N= 3.00: Tp= 1.75]
      [IaREC= 4.00: SMIN= 25.21: SMAX=168.09: SK= .010]
      [InterEventTime=  12.00]
R0025:C00026-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:LM_CK       1021.00   14.476 No_date   30:46   38.60 .519     .000
      [CN= 80.0: N= 3.00: Tp= 2.46]
      [IaREC= 4.00: SMIN= 26.32: SMAX=175.50: SK= .010]
      [InterEventTime=  12.00]
R0025:C00027-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_2         177.00    5.438 No_date   28:45   35.66 .479     .000
      [CN= 77.0: N= 3.00: Tp=  .75]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0025:C00028-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SM_DR       1122.00   13.229 No_date   31:45   39.36 .529     .000
      [CN= 81.0: N= 3.00: Tp= 3.25]
      [IaREC= 4.00: SMIN= 25.21: SMAX=168.09: SK= .010]
      [InterEventTime=  12.00]
R0025:C00029-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:MO_DR       2737.00   29.508 No_date   31:30   34.94 .470     .000
      [CN= 76.0: N= 3.00: Tp= 3.03]
      [IaREC= 4.00: SMIN= 32.46: SMAX=216.39: SK= .010]
      [InterEventTime=  12.00]
#
# Routing hydrographs
#
# Starting with the addition of Jock River Headwater and Subwatershed 13
#
R0025:C00030-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:JR_HW       3680.00   15.500 No_date   36:56   25.80  n/a     .000
                     +    1.0 02:SW_13        971.00    5.778 No_date   32:34   24.02  n/a     .000
                  SUM=    1.0 01:S_N13       4651.00   19.777 No_date   35:26   25.42  n/a     .000
#
# Sum of hydrographs from Node 13 routed to Node 13A
# (Approximated cross-section - see cross-section 258)
# Use n=0.04 for summer conditions and n=0.025 for spring conditions
#
R0025:C00031-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N13       4651.00   19.777 No_date   35:26   25.42  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N13A        4651.00   15.935 No_date   39:17   25.42  n/a     .000
      [L/S/n= 9074./ .022/.040]
      {Vmax=  .548:Dmax= 3.659}
#
# Addition of Subwatershed Jock River at Goodwood Marsh to Node 13A
#
R0025:C00032-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N13A        4651.00   15.935 No_date   39:17   25.42  n/a     .000
                     +    1.0 02:JR_GWM      3074.00    7.521 No_date   39:59   20.65  n/a     .000
                  SUM=    1.0 01:SN13A       7725.00   23.402 No_date   39:59   23.52  n/a     .000
#
# Insertion of a reservoir to simulate the effects of the Goodwood Marsh
#
R0025:C00033-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:SN13A       7725.00   23.402 No_date   39:59   23.52  n/a     .000
                out <=    1.0 01:RES_GM      7725.00    3.678 No_date   60:27   23.52  n/a     .000
```

```
     {MxStoUsed=.1192E+03  m3}
#
R0025:C00034------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:RES_GM      7725.00    3.678 No_date   60:27   23.52  n/a     .000
      fname :H_RESGM
      remark:Outflow from Res GM
# Output of Reservoir Goodwood Marsh routed from Node 13A to Node 12
# (Approximated cross-section - see cross-section 258)
# Use n=0.04 for summer conditions and n=0.025 for spring conditions
R0025:C00035------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:RES_GM      7725.00    3.678 No_date   60:27   23.52  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N12         7725.00    3.675 No_date   63:05   23.52  n/a     .000
      [L/S/n= 5926./ .076/.040]
      {Vmax=  .552:Dmax= 1.524}
#
# Addition of Subwatershed Jock River at Ashton to Node 12
#
R0025:C00036------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N12         7725.00    3.675 No_date   63:05   23.52  n/a     .000
                     +    1.0 02:JR_ASH      1781.00   14.166 No_date   32:40   31.50  n/a     .000
                  SUM=    1.0 01:S_N12       9506.00   16.182 No_date   32:43   25.02  n/a     .000
R0025:C00037------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:S_N12       9506.00   16.182 No_date   32:43   25.02  n/a     .000
      fname :H_SN12
      remark:flow at S_N12 near Ashton
#
# Sum of hydrographs from Node 12 routed to Node 11
# (Approximated cross-section - see cross-section 258)
# Use n=0.04 for summer conditions and n=0.025 for spring conditions
#
# Sum of hydrographs from Node 12 routed to Node 11 with Dummy section 248
#
R0025:C00038------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N12       9506.00   16.182 No_date   32:43   25.02  n/a     .000
     [RDT= 1.00] out<-    1.0 01:Dum11       9506.00   16.007 No_date   33:02   25.02  n/a     .000
      [L/S/n=  972./ .054/.040]
      {Vmax=  .721:Dmax= 2.847}
#
# Addition of Subwatershed 11 and No Name Creek to Node 11
#
R0025:C00039------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:Dum11       9506.00   16.007 No_date   33:02   25.02  n/a     .000
                     +    1.0 02:SW_11        500.00    7.521 No_date   29:22   27.01  n/a     .000
                     +    1.0 02:NN_CK       1917.00   10.351 No_date   34:27   27.01  n/a     .000
                  SUM=    1.0 01:S_N11      11923.00   27.908 No_date   33:04   25.42  n/a     .000
#
# Sum of hydrographs from Node 11 routed to Node 10
# Section 1
#
R0025:C00040------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N11      11923.00   27.908 No_date   33:04   25.42  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N10        11923.00   18.039 No_date   40:01   25.42  n/a     .000
      [L/S/n=14028./ .157/.040]
      {Vmax=  .464:Dmax= 1.329}
#
# Addition of Subwatershed 10 to Node 10
#
R0025:C00041------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N10        11923.00   18.039 No_date   40:01   25.42  n/a     .000
                     +    1.0 02:SW_10       5666.00   27.457 No_date   37:54   31.50  n/a     .000
                  SUM=    1.0 01:S_N10      17589.00   45.026 No_date   38:35   27.38  n/a     .000
R0025:C00042------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:S_N10      17589.00   45.026 No_date   38:35   27.38  n/a     .000
      fname :H_SN10
      remark:flow at S_N10: N10 + SW_10
# Addition of Kings Creek to S_N10
#
R0025:C00043------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:S_N10      17589.00   45.026 No_date   38:35   27.38  n/a     .000
                     +    1.0 02:KG_CK       8376.00   26.276 No_date   39:59   27.01  n/a     .000
                  SUM=    1.0 01:S_N10A     25965.00   70.812 No_date   39:59   27.26  n/a     .000
#
# Sum of hydrographs from Node 10 routed to Node 9
# Section 2
#
R0025:C00044------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N10A     25965.00   70.812 No_date   39:59   27.26  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N9         25965.00   69.032 No_date   39:59   27.26  n/a     .000
      [L/S/n= 3982./ .075/.040]
      {Vmax=  .718:Dmax= 1.889}
#
# Addition of Subwatershed 9 and Nichols Creek to Node 9
#
R0025:C00045------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N9         25965.00   69.032 No_date   39:59   27.26  n/a     .000
                     +    1.0 02:SW_9        1132.00   11.752 No_date   30:54   30.18  n/a     .000
                     +    1.0 02:NC_CK       4464.00   13.075 No_date   39:59   24.61  n/a     .000
                  SUM=    1.0 01:S_N9       31561.00   84.684 No_date   39:59   26.99  n/a     .000
#
# Sum of hydrographs from Node 9 routed to Node 8
# Section 3
#
R0025:C00046------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N9       31561.00   84.684 No_date   39:59   26.99  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N8         31561.00   79.245 No_date   39:59   26.99  n/a     .000
      [L/S/n= 2269./ .088/.045]
      {Vmax=  .363:Dmax= 1.743}
#
# Addition of Subwatershed 8 and Hobb's Drain to Node 8
#
R0025:C00047------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N8         31561.00   79.245 No_date   39:59   26.99  n/a     .000
                     +    1.0 02:SW_8         131.00    2.266 No_date   28:57   25.20  n/a     .000
                     +    1.0 02:HB_DR       3854.00   15.333 No_date   38:34   27.01  n/a     .000
                  SUM=    1.0 01:S_N8       35546.00   94.597 No_date   39:59   26.99  n/a     .000
#
# Sum of hydrographs from Node 8 routed to Node 7
# Section 4
#
R0025:C00048------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N8       35546.00   94.597 No_date   39:59   26.99  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N7         35546.00   80.337 No_date   45:08   26.98  n/a     .000
      [L/S/n= 3750./ .053/.070]
      {Vmax=  .226:Dmax= 2.161}
#
# Addition of Subwatershed 7 to Node 7
#
R0025:C00049------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N7         35546.00   80.337 No_date   45:08   26.98  n/a     .000
                     +    1.0 02:SW_7        3197.00   11.663 No_date   36:24   21.75  n/a     .000
                  SUM=    1.0 01:S_N7       38743.00   86.331 No_date   44:08   26.55  n/a     .000
R0025:C00050------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:S_N7       38743.00   86.331 No_date   44:08   26.55  n/a     .000
      fname :H_SN7
      remark:flow at S_N7: N7 + SW_7
# Insertion of a reservoir to simulate the effects of the Richmond Fen.
# Storage area and volumes were estimated from available topo maps.
# Release rate from fen was assumed to be controlled by the downstream
# river cross-section for summer conditions.  It is was assumed that for up to
# 0.75 m of water, the main channel of the river provided the storage.  Above
# this depth, the wetland starts to signigicantly store water.
#
R0025:C00051------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:S_N7       38743.00   86.331 No_date   44:08   26.55  n/a     .000
                out <=    1.0 01:RES_RF     38743.00   42.032 No_date   60:05   26.55  n/a     .000
     {MxStoUsed=.3671E+03  m3}
R0025:C00052------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:RES_RF     38743.00   42.032 No_date   60:05   26.55  n/a     .000
      fname :H_ResRF
      remark:outflow of Richmond Fen
#
# Sum of hydrographs from Node 7 routed to Node 6
# Section 5
#
R0025:C00053------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:RES_RF     38743.00   42.032 No_date   60:05   26.55  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N6         38743.00   41.826 No_date   61:26   26.55  n/a     .000
      [L/S/n= 3056./ .082/.025]
      {Vmax=  .514:Dmax= 1.120}
#
# Addition of Subwatershed 6 and Van Gaal Drain to Node 6
#
R0025:C00054------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N6         38743.00   41.826 No_date   61:26   26.55  n/a     .000
                     +    1.0 02:SW_6         165.00    1.076 No_date   33:03   27.63  n/a     .000
                     +    1.0 02:VG_DR       1332.00    7.882 No_date   35:14   31.50  n/a     .000
                  SUM=    1.0 01:S_N6       40240.01   41.832 No_date   61:20   26.72  n/a     .000
#
# Sum of hydrographs from Node 6 routed to Node 5
# Section 6
#
R0025:C00055------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N6       40240.01   41.832 No_date   61:20   26.72  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N5         40240.01   41.717 No_date   62:14   26.72  n/a     .000
      [L/S/n= 1852./ .054/.035]
      {Vmax=  .444:Dmax= 1.222}
#
# Addition of Subwatershed 5 and Flowing Creek to Node 5
#
R0025:C00056------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N5         40240.01   41.717 No_date   62:14   26.72  n/a     .000
                     +    1.0 02:SW_5         224.00    6.882 No_date   28:45   35.66  n/a     .000
                     +    1.0 02:FL_CK       4945.00   37.664 No_date   33:18   32.85  n/a     .000
                  SUM=    1.0 01:S_N5       45409.01   62.634 No_date   34:27   27.43  n/a     .000
#
# Sum of hydrographs from Node 5 routed to Node 5A
# Section 7
#
R0025:C00057------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N5       45409.01   62.634 No_date   34:27   27.43  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N5A        45409.01   62.487 No_date   34:43   27.43  n/a     .000
      [L/S/n=  556./ .090/.040]
      {Vmax=  .511:Dmax= 1.222}
#
# Addition of Subwatershed 5A1 and Subwatershed 5A2 to Node 5A
#
R0025:C00058------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N5A        45409.01   62.487 No_date   34:43   27.43  n/a     .000
                     +    1.0 02:SW_5A2        20.00     .798 No_date   28:35   39.36  n/a     .000
                     +    1.0 02:SW_5A1      1412.00    7.480 No_date   37:50   34.24  n/a     .000
                  SUM=    1.0 01:S_N5A      46841.01   69.334 No_date   35:01   27.64  n/a     .000
#
# Sum of hydrographs from Node 5A routed to Node 4
# Section 8
#
R0025:C00059------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N5A      46841.01   69.334 No_date   35:01   27.64  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N4         46841.01   66.496 No_date   36:27   27.64  n/a     .000
      [L/S/n= 4630./ .043/.035]
      {Vmax=  .840:Dmax= 3.530}
#
# Addition of Subwatershed 4 and Leamy Creek to Node 4
#
R0025:C00060------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N4         46841.01   66.496 No_date   36:27   27.64  n/a     .000
                     +    1.0 02:SW_4         585.00   10.942 No_date   29:56   39.36  n/a     .000
                     +    1.0 02:LM_CK       1021.00   14.476 No_date   30:46   38.60  n/a     .000
                  SUM=    1.0 01:S_N4       48447.00   73.819 No_date   35:41   28.02  n/a     .000
R0025:C00061------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:S_N4       48447.00   73.819 No_date   35:41   28.02  n/a     .000
      fname :S_N4.0025
      remark:flow at S_N4
#
# Sum of hydrographs from Node 4 routed to Node 2
# Section 9
#
R0025:C00062------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N4       48447.00   73.819 No_date   35:41   28.02  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N2         48447.00   73.485 No_date   35:42   28.02  n/a     .000
      [L/S/n= 1667./ .060/.040]
      {Vmax=  .874:Dmax= 3.570}
#
# Addition of Subwatershed 2 with Monohan Drain and Smith Drain to Node 2
#
R0025:C00063------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N2         48447.00   73.485 No_date   35:42   28.02  n/a     .000
                     +    1.0 02:SW_2         177.00    5.438 No_date   28:45   35.66  n/a     .000
                     +    1.0 02:SM_DR       1122.00   13.229 No_date   31:45   39.36  n/a     .000
                     +    1.0 02:MO_DR       2737.00   29.508 No_date   31:30   34.94  n/a     .000
                  SUM=    1.0 01:S_N2       52483.00  106.109 No_date   33:07   28.64  n/a     .000
R0025:C00064------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:S_N2       52483.00  106.109 No_date   33:07   28.64  n/a     .000
      fname :H_SN2
      remark:flow at S_N2 Jock River Gauge at Moodie Dr.
#
# Sum of hydrographs from Node 2 routed to Node 1
# Section 10
#
#***************************************************************************
#
# Hydrograph from Node 2 routed to Node 416
# Channel X-Section obtained from RVCA Hydraulic Model - Station 9025
#
R0025:C00065------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N2       52483.00  106.109 No_date   33:07   28.64  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N_416      52483.00  103.234 No_date   34:03   28.64  n/a     .000
      [L/S/n= 2327./ .050/.055]
      {Vmax=  .754:Dmax= 3.305}
#***************************************************************************
#    Catchment SW-1a
#    - Portion of RVCA catchment SW_1 outside of Reach 1 subwatershed
#    - Undeveloped agricultural land
#***************************************************************************
R0025:C00066------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_1a        536.42    5.154 No_date   31:16   30.13 .405     .000
      [CN= 72.0: N= 3.00: Tp= 2.79]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
R0025:C00067------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-Okeefe    44.93    6.507 No_date   28:03   57.38 .771     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .75:LGI= 547.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0025:C00068------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N_416      52483.00  103.234 No_date   34:03   28.64  n/a     .000
                     +    1.0 02:SW_1a        536.42    5.154 No_date   31:16   30.13  n/a     .000
                     +    1.0 02:S-1-Okeefe    44.93    6.507 No_date   28:03   57.38  n/a     .000
                  SUM=    1.0 01:SN_416     53064.36  107.198 No_date   33:26   28.68  n/a     .000
R0025:C00069------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_416     53064.36  107.198 No_date   33:26   28.68  n/a     .000
      fname :SN_416.0025
      remark:Total Flows at Highway 416
#
# Hydrograph from Node 416 routed to Node at Okeefe drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 7245
#
R0025:C00070------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_416     53064.36  107.198 No_date   33:26   28.68  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N_OK       53064.36  107.111 No_date   33:27   28.68  n/a     .000
      [L/S/n=  497./ .302/.055]
      {Vmax= 1.568:Dmax= 2.810}
#***************************************************************************
#    Catchment OKEEFE
#    - To O'Keefe drain (north of the Jock)
#    - Developed with assumed 43% imp.
#    - 2020-12-01 add Okeefe model (Area 513.02 HA) instead of current Okeefe (Area 513.02 HA)
#    - 2020-11-20 Okeefe detailed model was added as per the NOVATECH SWMHYMO model (Citi-Gate 2014).
#***************************************************************************
R0025:C00071------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:O-1           63.72     .937 No_date   28:58   22.21 .299     .000
      [CN= 61.0: N= 3.00: Tp=  .90]
      [IaREC= 4.00: SMIN= 64.50: SMAX=430.01: SK= .010]
      [InterEventTime=  12.00]
R0025:C00072------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:O-1           63.72     .937 No_date   28:58   22.21  n/a     .000
     [RDT= 1.00] out<-    1.0 01:O-1R          63.72     .877 No_date   29:15   22.21  n/a     .000
      [L/S/n=  960./ .630/.043]
      {Vmax=  .829:Dmax=  .398}
R0025:C00073------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:O-2           28.61     .330 No_date   29:13   20.55 .276     .000
      [CN= 57.0: N= 3.00: Tp= 1.10]
      [IaREC= 4.00: SMIN= 76.32: SMAX=508.81: SK= .010]
      [InterEventTime=  12.00]
R0025:C00074------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:O-4           46.94     .426 No_date   29:00   15.62 .210     .000
      [CN= 49.0: N= 3.00: Tp=  .90]
      [IaREC= 4.00: SMIN=104.59: SMAX=697.25: SK= .010]
      [InterEventTime=  12.00]
R0025:C00075------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:O-1R          63.72     .877 No_date   29:15   22.21  n/a     .000
                     +    1.0 02:O-2           28.61     .330 No_date   29:13   20.55  n/a     .000
                     +    1.0 02:O-4           46.94     .426 No_date   29:00   15.62  n/a     .000
                  SUM=    1.0 01:OKF-N        139.27    1.623 No_date   29:11   19.65  n/a     .000
R0025:C00076------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:OKF-N        139.27    1.623 No_date   29:11   19.65  n/a     .000
     [RDT= 1.00] out<-    1.0 01:OKF-NR       139.27    1.620 No_date   29:14   19.65  n/a     .000
      [L/S/n=  210./ .810/.043]
      {Vmax=  .998:Dmax=  .685}
R0025:C00077------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:O-6           16.46     .143 No_date   28:45   13.49 .181     .000
      [CN= 43.0: N= 3.00: Tp=  .70]
      [IaREC= 4.00: SMIN=134.47: SMAX=896.47: SK= .010]
      [InterEventTime=  12.00]
R0025:C00078------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:O-3           39.67    1.013 No_date   28:23   24.45 .329     .000
      [XIMP=.15:TIMP=.30]
      [LOSS= 2 :CN= 50.0]
      [Pervious     area: IAper= 4.67:SLPP= .32:LGP= 440.:MNP=.035:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .32:LGI=1880.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 99.77: SMAX=665.12: SK= .010]
R0025:C00079------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:O-5           60.63    2.500 No_date   28:10   28.05 .377     .000
      [XIMP=.13:TIMP=.26]
      [LOSS= 2 :CN= 61.0]
      [Pervious     area: IAper= 4.67:SLPP=1.38:LGP= 550.:MNP=.035:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.38:LGI=1450.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 64.50: SMAX=430.01: SK= .010]
R0025:C00080------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:OKF-NR       139.27    1.620 No_date   29:14   19.65  n/a     .000
                     +    1.0 02:O-3           39.67    1.013 No_date   28:23   24.45  n/a     .000
                     +    1.0 02:O-5           60.63    2.500 No_date   28:10   28.05  n/a     .000
                     +    1.0 02:O-6           16.46     .143 No_date   28:45   13.49  n/a     .000
                  SUM=    1.0 01:PT1          256.03    4.071 No_date   28:22   21.98  n/a     .000
R0025:C00081------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:O-7            5.28     .078 No_date   28:37   18.08 .243     .000
      [CN= 54.0: N= 3.00: Tp=  .60]
      [IaREC= 4.00: SMIN= 87.01: SMAX=580.07: SK= .010]
      [InterEventTime=  12.00]
R0025:C00082------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:PT1          256.03    4.071 No_date   28:22   21.98  n/a     .000
                     +    1.0 02:O-7            5.28     .078 No_date   28:37   18.08  n/a     .000
                  SUM=    1.0 01:FF           261.31    4.141 No_date   28:22   21.91  n/a     .000
R0025:C00083------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:FF           261.31    4.141 No_date   28:22   21.91  n/a     .000
     [RDT= 1.00] out<-    1.0 01:DRAIN1       261.31    4.014 No_date   28:28   21.91  n/a     .000
      [L/S/n=  302./1.000/.043]
      {Vmax=  .793:Dmax=  .719}
R0025:C00084------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:D1             1.17     .078 No_date   28:12   37.38 .502     .000
      [CN= 84.0: N= 3.00: Tp=  .28]
      [IaREC= 4.00: SMIN= 21.09: SMAX=140.62: SK= .010]
      [InterEventTime=  12.00]
R0025:C00085------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A1             2.50     .464 No_date   28:01   58.43 .785     .000
      [XIMP=.68:TIMP=.85]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 224.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
```

```
R0025:C00086-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:A1              2.50     .464 No_date   28:01   58.43  n/a     .000
                out <=    1.0 01:A1-STR          2.50     .117 No_date   28:22   58.43  n/a     .000
           overflow <=    1.0 03:A1-OVF           .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.6660E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00087-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:ST-2             .59     .091 No_date   28:00   45.54 .612     .000
      [XIMP=.46:TIMP=.57]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 109.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00088-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:ST-2             .59     .091 No_date   28:00   45.54  n/a     .000
                out <=    1.0 01:ST2STR           .59     .052 No_date   28:07   45.54  n/a     .000
           overflow <=    1.0 03:ST2OVF           .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.2899E-02  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00089-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:O-8            60.55    1.147 No_date   29:04   28.63 .385     .000
      [CN= 69.0: N= 3.00: Tp= 1.00]
      [IaREC= 4.00: SMIN= 44.82: SMAX=298.82: SK= .010]
      [InterEventTime=  12.00]
R0025:C00090-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:O-8            60.55    1.147 No_date   29:04   28.63  n/a     .000
     [RDT= 1.00] out<-    1.0 01:O8PIPE         60.55    1.141 No_date   29:08   28.63  n/a     .000
      [L/S/n=  335./ .100/.013]
      {Vmax= 1.178:Dmax=  .540}
      {HGTH= 1.20:WDTH= 1.80}
R0025:C00091-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:DRAIN1        261.31    4.014 No_date   28:28   21.91  n/a     .000
                     +    1.0 02:D1              1.17     .078 No_date   28:12   37.38  n/a     .000
                     +    1.0 02:A1-STR          2.50     .117 No_date   28:22   58.43  n/a     .000
                     +    1.0 02:A1-OVF           .00     .000 No_date    0:00     .00  n/a     .000
                     +    1.0 02:ST2STR           .59     .052 No_date   28:07   45.54  n/a     .000
                     +    1.0 02:ST2OVF           .00     .000 No_date    0:00     .00  n/a     .000
                     +    1.0 02:O8PIPE         60.55    1.141 No_date   29:08   28.63  n/a     .000
                  SUM=    1.0 01:ST2-IN        326.12    5.017 No_date   28:36   23.53  n/a     .000
R0025:C00092-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A7              3.51     .635 No_date   28:01   58.43 .785     .000
      [XIMP=.68:TIMP=.85]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 265.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00093-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:A7              3.51     .635 No_date   28:01   58.43  n/a     .000
                out <=    1.0 01:A7-STR          3.51     .164 No_date   28:23   58.43  n/a     .000
           overflow <=    1.0 03:A7-OVF           .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.9358E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00094-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:ST-3             .71     .108 No_date   28:00   45.54 .612     .000
      [XIMP=.46:TIMP=.57]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 119.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00095-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:ST-3             .71     .108 No_date   28:00   45.54  n/a     .000
                out <=    1.0 01:ST3STR           .71     .063 No_date   28:08   45.54  n/a     .000
           overflow <=    1.0 03:ST3OVF           .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.3355E-02  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00096-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:ST2-IN        326.12    5.017 No_date   28:36   23.53  n/a     .000
                     +    1.0 02:A7-STR          3.51     .164 No_date   28:23   58.43  n/a     .000
                     +    1.0 02:A7-OVF           .00     .000 No_date    0:00     .00  n/a     .000
                     +    1.0 02:ST3STR           .71     .063 No_date   28:08   45.54  n/a     .000
                     +    1.0 02:ST3OVF           .00     .000 No_date    0:00     .00  n/a     .000
                  SUM=    1.0 01:PT2ST3        330.34    5.204 No_date   28:28   23.95  n/a     .000
R0025:C00097-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:PT2ST3        330.34    5.204 No_date   28:28   23.95  n/a     .000
     [RDT= 1.00] out<-    1.0 01:DRAIN2        330.34    4.806 No_date   29:00   23.95  n/a     .000
      [L/S/n=  592./ .230/.043]
      {Vmax=  .581:Dmax= 1.088}
R0025:C00098-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:D2              2.28     .062 No_date   29:03   37.38 .502     .000
      [CN= 84.0: N= 3.00: Tp=  .99]
      [IaREC= 4.00: SMIN= 21.09: SMAX=140.62: SK= .010]
      [InterEventTime=  12.00]
R0025:C00099-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A17            12.04    1.933 No_date   28:03   58.43 .785     .000
      [XIMP=.68:TIMP=.85]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 491.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00100-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:A17            12.04    1.933 No_date   28:03   58.43  n/a     .000
                out <=    1.0 01:A17STR         12.04     .553 No_date   28:29   58.43  n/a     .000
           overflow <=    1.0 03:A17OVF           .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.3155E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00101-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:ST-4             .35     .055 No_date   28:00   45.54 .612     .000
      [XIMP=.46:TIMP=.57]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=  84.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00102-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:ST-4             .35     .055 No_date   28:00   45.54  n/a     .000
                out <=    1.0 01:ST4STR           .35     .031 No_date   28:07   45.54  n/a     .000
           overflow <=    1.0 03:ST4OVF           .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.2092E-02  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00103-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A18             5.30     .922 No_date   28:02   58.43 .785     .000
      [XIMP=.68:TIMP=.85]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 326.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00104-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:A18             5.30     .922 No_date   28:02   58.43  n/a     .000
                out <=    1.0 01:A18STR          5.30     .247 No_date   28:25   58.43  n/a     .000
           overflow <=    1.0 03:A18OVF           .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.1408E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00105-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:DRAIN2        330.34    4.806 No_date   29:00   23.95  n/a     .000
                     +    1.0 02:D2              2.28     .062 No_date   29:03   37.38  n/a     .000
                     +    1.0 02:A17STR         12.04     .553 No_date   28:29   58.43  n/a     .000
                     +    1.0 02:A17OVF           .00     .000 No_date    0:00     .00  n/a     .000
                     +    1.0 02:ST4STR           .35     .031 No_date   28:07   45.54  n/a     .000
                     +    1.0 02:ST4OVF           .00     .000 No_date    0:00     .00  n/a     .000
                     +    1.0 02:A18STR          5.30     .247 No_date   28:25   58.43  n/a     .000
                     +    1.0 02:A18OVF           .00     .000 No_date    0:00     .00  n/a     .000
                  SUM=    1.0 01:PT3ST4        350.31    5.557 No_date   28:56   25.77  n/a     .000
R0025:C00106-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:PT3ST4        350.31    5.557 No_date   28:56   25.77  n/a     .000
     [RDT= 1.00] out<-    1.0 01:DRAIN3        350.31    5.293 No_date   29:13   25.77  n/a     .000
      [L/S/n=  525./ .230/.043]
      {Vmax=  .603:Dmax= 1.137}
R0025:C00107-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:D3              2.51     .095 No_date   28:43   40.67 .547     .000
      [CN= 86.0: N= 3.00: Tp=  .73]
      [IaREC= 4.00: SMIN= 17.43: SMAX=116.21: SK= .010]
      [InterEventTime=  12.00]
R0025:C00108-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:C1              3.41     .618 No_date   28:01   58.43 .785     .000
      [XIMP=.68:TIMP=.85]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 261.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00109-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:C1              3.41     .618 No_date   28:01   58.43  n/a     .000
                out <=    1.0 01:C1-STR          3.41     .159 No_date   28:23   58.43  n/a     .000
           overflow <=    1.0 03:C1-OVF           .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.9080E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00110-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:ST-5             .45     .071 No_date   28:00   45.54 .612     .000
      [XIMP=.46:TIMP=.57]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=  95.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00111-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:ST-5             .45     .071 No_date   28:00   45.54  n/a     .000
                out <=    1.0 01:ST5STR           .45     .040 No_date   28:07   45.54  n/a     .000
           overflow <=    1.0 03:ST5OVF           .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.2455E-02  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00112-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:DRAIN3        350.31    5.293 No_date   29:13   25.77  n/a     .000
                     +    1.0 02:D3              2.51     .095 No_date   28:43   40.67  n/a     .000
                     +    1.0 02:C1-STR          3.41     .159 No_date   28:23   58.43  n/a     .000
                     +    1.0 02:C1-OVF           .00     .000 No_date    0:00     .00  n/a     .000
                     +    1.0 02:ST5STR           .45     .040 No_date   28:07   45.54  n/a     .000
                     +    1.0 02:ST5OVF           .00     .000 No_date    0:00     .00  n/a     .000
                  SUM=    1.0 01:ST5-E         356.68    5.480 No_date   29:11   26.21  n/a     .000
R0025:C00113-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:STRAND          7.59     .918 No_date   28:10   57.02 .767     .000
      [XIMP=.64:TIMP=.85]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1230.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00114-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:STRAND          7.59     .918 No_date   28:10   57.02  n/a     .000
                out <=    1.0 01:S-POND          7.59     .109 No_date   29:19   57.02  n/a     .000
           overflow <=    1.0 03:S-OVF            .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.2915E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00115-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:ST5-E         356.68    5.480 No_date   29:11   26.21  n/a     .000
                     +    1.0 02:S-POND          7.59     .109 No_date   29:19   57.02  n/a     .000
                     +    1.0 02:S-OVF            .00     .000 No_date    0:00     .00  n/a     .000
                  SUM=    1.0 01:SSAOUT        364.27    5.589 No_date   29:11   26.85  n/a     .000
R0025:C00116-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SSAOUT        364.27    5.589 No_date   29:11   26.85  n/a     .000
      fname :SSAOUT.0025
      remark:SSAOUT
R0025:C00117-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:Area-A         66.75    7.879 No_date   28:09   56.06 .754     .000
      [XIMP=.64:TIMP=.80]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1155.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00118-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:Area-A         66.75    7.879 No_date   28:09   56.06  n/a     .000
      fname :Area-A.0025
      remark:SMWF-A Inflow
R0025:C00119-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:Area-A         66.75    7.879 No_date   28:09   56.06  n/a     .000
                out <=    1.0 01:SWMF-A         66.75     .788 No_date   29:28   56.05  n/a     .000
           overflow <=    1.0 03:SWMAOV           .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.2643E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00120-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SWMF-A         66.75     .788 No_date   29:28   56.05  n/a     .000
      fname :SWMF-A.0025
      remark:SMWF-A Outflow
R0025:C00121-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:SSAOUT        364.27    5.589 No_date   29:11   26.85  n/a     .000
                     +    1.0 02:SWMF-A         66.75     .788 No_date   29:28   56.05  n/a     .000
                     +    1.0 02:SWMAOV           .00     .000 No_date    0:00     .00  n/a     .000
                  SUM=    1.0 01:PT4ST5        431.02    6.356 No_date   29:13   31.37  n/a     .000
R0025:C00122-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:C6              1.87     .354 No_date   28:01   58.43 .785     .000
      [XIMP=.68:TIMP=.85]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 193.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00123-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:C6              1.87     .354 No_date   28:01   58.43  n/a     .000
                out <=    1.0 01:C6-STR          1.87     .089 No_date   28:21   58.43  n/a     .000
           overflow <=    1.0 03:C6-OVF           .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.5013E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00124-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:C7              1.62     .309 No_date   28:01   58.43 .785     .000
      [XIMP=.68:TIMP=.85]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 180.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00125-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:C7              1.62     .309 No_date   28:01   58.43  n/a     .000
                out <=    1.0 01:C7-STR          1.62     .077 No_date   28:21   58.43  n/a     .000
           overflow <=    1.0 03:C7-OVF           .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.4331E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00126-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:ST-6             .41     .065 No_date   28:00   45.54 .612     .000
      [XIMP=.46:TIMP=.57]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=  91.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00127-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:ST-6             .41     .065 No_date   28:00   45.54  n/a     .000
                out <=    1.0 01:ST6STR           .41     .036 No_date   28:07   45.54  n/a     .000
           overflow <=    1.0 03:ST6OVF           .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.2350E-02  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00128-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:PT4ST5        431.02    6.356 No_date   29:13   31.37  n/a     .000
                     +    1.0 02:C6-STR          1.87     .089 No_date   28:21   58.43  n/a     .000
                     +    1.0 02:C6-OVF           .00     .000 No_date    0:00     .00  n/a     .000
                     +    1.0 02:C7-STR          1.62     .077 No_date   28:21   58.43  n/a     .000
                     +    1.0 02:C7-OVF           .00     .000 No_date    0:00     .00  n/a     .000
                     +    1.0 02:ST6STR           .41     .036 No_date   28:07   45.54  n/a     .000
                     +    1.0 02:ST6OVF           .00     .000 No_date    0:00     .00  n/a     .000
                  SUM=    1.0 01:PT5ST6        434.92    6.464 No_date   29:12   31.60  n/a     .000
R0025:C00129-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:PT5ST6        434.92    6.464 No_date   29:12   31.60  n/a     .000
     [RDT= 1.00] out<-    1.0 01:DRAIN4        434.92    6.229 No_date   29:21   31.60  n/a     .000
      [L/S/n=  324./ .100/.043]
      {Vmax=  .475:Dmax= 1.440}
R0025:C00130-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:D4              1.73     .082 No_date   28:34   43.34 .583     .000
      [CN= 88.0: N= 3.00: Tp=  .60]
      [IaREC= 4.00: SMIN= 14.94: SMAX= 99.61: SK= .010]
      [InterEventTime=  12.00]
R0025:C00131-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:Area-B         24.04    3.916 No_date   28:03   54.85 .737     .000
      [XIMP=.62:TIMP=.77]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=1.40:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.40:LGI= 693.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00132-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:Area-B         24.04    3.916 No_date   28:03   54.85  n/a     .000
                out <=    1.0 01:SWMF-B         24.04     .492 No_date   28:44   54.85  n/a     .000
           overflow <=    1.0 03:SWMBOVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.8178E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00133-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:DRAIN4        434.92    6.229 No_date   29:21   31.60  n/a     .000
                     +    1.0 02:D4              1.73     .082 No_date   28:34   43.34  n/a     .000
                     +    1.0 02:SWMF-B         24.04     .492 No_date   28:44   54.85  n/a     .000
                     +    1.0 02:SWMBOVF          .00     .000 No_date    0:00     .00  n/a     .000
                  SUM=    1.0 01:D4-EX         460.69    6.717 No_date   29:21   32.86  n/a     .000
R0025:C00134-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:D4-EX         460.69    6.717 No_date   29:21   32.86  n/a     .000
     [RDT= 1.00] out<-    1.0 01:DRAIN5        460.69    6.598 No_date   29:35   32.86  n/a     .000
      [L/S/n=  413./ .160/.033]
      {Vmax=  .641:Dmax=  .984}
R0025:C00135-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:D5              1.90     .075 No_date   28:41   40.67 .547     .000
      [CN= 86.0: N= 3.00: Tp=  .69]
      [IaREC= 4.00: SMIN= 17.43: SMAX=116.21: SK= .010]
      [InterEventTime=  12.00]
R0025:C00136-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:O-13SDF         9.74     .487 No_date   28:22   38.23 .514     .000
      [CN= 81.0: N= 3.00: Tp=  .43]
      [IaREC= 4.00: SMIN= 25.21: SMAX=168.09: SK= .010]
      [InterEventTime=  12.00]
R0025:C00137-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:O-13SDF         9.74     .487 No_date   28:22   38.23  n/a     .000
                out <=    1.0 01:SDF             9.74     .052 No_date   31:01   38.23  n/a     .000
           overflow <=    1.0 03:OVFSDF           .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.2061E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00138-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:DRAIN5        460.69    6.598 No_date   29:35   32.86  n/a     .000
                     +    1.0 02:D5              1.90     .075 No_date   28:41   40.67  n/a     .000
                     +    1.0 02:SDF             9.74     .052 No_date   31:01   38.23  n/a     .000
                  SUM=    1.0 01:PT6MC         472.33    6.689 No_date   29:35   33.00  n/a     .000
R0025:C00139-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:O-15           10.67     .668 No_date   28:13   37.06 .498     .000
      [CN= 82.0: N= 3.00: Tp=  .30]
      [IaREC= 4.00: SMIN= 23.09: SMAX=153.94: SK= .010]
      [InterEventTime=  12.00]
R0025:C00140-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:PT6MC         472.33    6.689 No_date   29:35   33.00  n/a     .000
                     +    1.0 02:O-15           10.67     .668 No_date   28:13   37.06  n/a     .000
                  SUM=    1.0 01:M-C           483.00    6.790 No_date   29:34   33.09  n/a     .000
R0025:C00141-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:M-C           483.00    6.790 No_date   29:34   33.09  n/a     .000
     [RDT= 1.00] out<-    1.0 01:O-14Ch        483.00    6.173 No_date   30:10   33.09  n/a     .000
      [L/S/n=  845./ .100/.033]
      {Vmax=  .552:Dmax= 1.692}
R0025:C00142-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:O-14            5.00     .516 No_date   28:04   37.06 .498     .000
      [CN= 82.0: N= 3.00: Tp=  .13]
      [IaREC= 4.00: SMIN= 23.09: SMAX=153.94: SK= .010]
      [InterEventTime=  12.00]
R0025:C00143-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:O-14Ch        483.00    6.173 No_date   30:10   33.09  n/a     .000
                     +    1.0 02:O-14            5.00     .516 No_date   28:04   37.06  n/a     .000
                  SUM=    1.0 01:OKEEFE        488.00    6.203 No_date   30:09   33.13  n/a     .000
#**************************************************************************
#    Okeefe Pond
#    - Rating curve obtained assuming 40m3/ha in 24 hours for quality control
#      and a ratio of the catchment area to the West Clarke pond rating curve
#      from the MSS for the next coordinates
#**************************************************************************
R0025:C00144-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-D2         18.67    2.960 No_date   28:01   57.38 .771     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .75:LGI= 353.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0025:C00145-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-D3          6.79    1.150 No_date   28:01   57.38 .771     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .75:LGI= 213.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0025:C00146-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N_OK        53064.36  107.111 No_date   33:27   28.68  n/a     .000
                     +    1.0 02:OKEEFE        488.00    6.203 No_date   30:09   33.13  n/a     .000
                     +    1.0 02:S-1-D2         18.67    2.960 No_date   28:01   57.38  n/a     .000
                     +    1.0 02:S-1-D3          6.79    1.150 No_date   28:01   57.38  n/a     .000
                  SUM=    1.0 01:SN_OK       53577.82  109.356 No_date   33:27   28.74  n/a     .000
R0025:C00147-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_OK       53577.82  109.356 No_date   33:27   28.74  n/a     .000
      fname :SN_OK.0025
      remark:Total Flows at Okeefe Drain
#
# Hydrograph from Node Okeefe routed to Node at Foster Drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 6215
#
R0025:C00148-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_OK       53577.82  109.356 No_date   33:27   28.74  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N_FO        53577.82  109.064 No_date   33:50   28.74  n/a     .000
      [L/S/n= 1183./ .076/.035]
      {Vmax= 1.185:Dmax= 3.161}
```

```
#***************************************************************************
#    Catchment FOSTER
#    - To Foster ditch (north of the Jock)
#    - Partially developed (medium density); remaining agricultural
#    - 2020-12-01 JFSA Foster area is 332 as per Foster SWMF Environmental Study Report, CH2MHILL, Aug 2013.
#    - 2020-12-01 decrease Foster drainage area from (373 HA) to (307.98 HA) after increasing Okeefe drainage area to (5
#    - 2021-02-12  update Foster area to 325.44 ha as measured from QGIS
#***************************************************************************
R0025:C00149------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:FOSTER       325.44   28.008 No_date   28:12   52.35 .704     .000
      [XIMP=.55:TIMP=.55]
      [LOSS= 2 :CN= 74.0]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1473.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 36.67: SMAX=244.49: SK= .010]
#***************************************************************************
#    Foster Pond
#    - Rating curve obtained assuming 40m3/ha in 24 hours for quality control
#      and a ratio of the catchment area to the West Clarke pond rating curve
#      from the MSS for the next coordinates
#***************************************************************************
R0025:C00150------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:FOSTER       325.44   28.008 No_date   28:12   52.35  n/a     .000
                out <=    1.0 01:P_FOS        325.44    7.246 No_date   29:04   52.35  n/a     .000
           overflow <=    1.0 03:FO-OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.7008E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00151------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:P_FOS        325.44    7.246 No_date   29:04   52.35  n/a     .000
                    +     1.0 02:FO-OVF          .00     .000 No_date    0:00     .00  n/a     .000
                 SUM=     1.0 01:FOSTER-OUT   325.44    7.246 No_date   29:04   52.35  n/a     .000
#***************************************************************************
R0025:C00152------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:W_CLAR_BRA    73.29    9.076 No_date   28:05   56.82 .764     .000
      [XIMP=.60:TIMP=.65]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 699.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0025:C00153------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:W_CLAR_BRA    73.29    9.076 No_date   28:05   56.82  n/a     .000
                out <=    1.0 01:MS_P10        73.29    1.168 No_date   29:06   56.82  n/a     .000
           overflow <=    1.0 03:P10-OVF         .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.1685E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00154------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-FO-D2      4.94     .707 No_date   28:01   52.35 .704     .000
      [XIMP=.55:TIMP=.55]
      [LOSS= 2 :CN= 74.0]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 181.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 36.67: SMAX=244.49: SK= .010]
R0025:C00155------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:FOSTER-OUT   325.44    7.246 No_date   29:04   52.35  n/a     .000
                    +     1.0 02:S-1-FO-D2      4.94     .707 No_date   28:01   52.35  n/a     .000
                 SUM=     1.0 01:980          330.38    7.312 No_date   29:03   52.35  n/a     .000
R0025:C00156------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:980          330.38    7.312 No_date   29:03   52.35  n/a     .000
      fname :980.0025
      remark:Total Flows at Station 980 on Foster Drain
#
# Hydrograph from Node Foster SWM (Station 980)to Node at station 520
# Channel X-Section obtained from RVCA Hydraulic Model - Station 980
#
R0025:C00157------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:980          330.38    7.312 No_date   29:03   52.35  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:980-out      330.38    7.060 No_date   29:12   52.35  n/a     .000
      [L/S/n=  460./ .043/.035]
      {Vmax=  .642:Dmax= 1.518}
R0025:C00158------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-FO-D1      5.11     .830 No_date   28:00   56.90 .765     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 74.0]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 185.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 36.67: SMAX=244.49: SK= .010]
R0025:C00159------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:980-out      330.38    7.060 No_date   29:12   52.35  n/a     .000
                    +     1.0 02:S-1-FO-D1      5.11     .830 No_date   28:00   56.90  n/a     .000
                 SUM=     1.0 01:520          335.49    7.118 No_date   29:12   52.42  n/a     .000
R0025:C00160------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:520          335.49    7.118 No_date   29:12   52.42  n/a     .000
      fname :520.0025
      remark:Total Flows at Sation 520 on Foster Drain
# Hydrograph from Node at Station 520 (Foster Drain) to Node at station 6016 (Jock River)
# Channel X-Section obtained from RVCA Hydraulic Model - Station 520
#
R0025:C00161------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:520          335.49    7.118 No_date   29:12   52.42  n/a     .000
     [RDT= 1.00] out<-    1.0 01:520-out      335.49    7.060 No_date   29:22   52.42  n/a     .000
      [L/S/n=  860./ .587/.035]
      {Vmax= 1.475:Dmax=  .723}
R0025:C00162------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-FO-F-D    14.96    2.238 No_date   28:02   56.90 .765     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 74.0]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 316.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 36.67: SMAX=244.49: SK= .010]
R0025:C00163------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-D8         5.27     .945 No_date   28:01   42.02 .565     .000
      [XIMP=.32:TIMP=.65]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI= .75:LGI= 187.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00164------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:S-1-A         75.88    2.541 No_date   28:36   34.14 .459     .000
      [CN= 77.0: N= 3.00: Tp=  .62]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0025:C00165------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:W_CLAR_UND    35.65     .789 No_date   29:10   34.14 .459     .000
      [CN= 77.0: N= 3.00: Tp= 1.10]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0025:C00166------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N_FO       53577.82  109.064 No_date   33:50   28.74  n/a     .000
                    +     1.0 02:520-out      335.49    7.060 No_date   29:22   52.42  n/a     .000
                    +     1.0 02:MS_P10        73.29    1.168 No_date   29:06   56.82  n/a     .000
                    +     1.0 02:P10-OVF         .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:W_CLAR_UND    35.65     .789 No_date   29:10   34.14  n/a     .000
                    +     1.0 02:S-1-FO-F-D    14.96    2.238 No_date   28:02   56.90  n/a     .000
                    +     1.0 02:S-1-D8         5.27     .945 No_date   28:01   42.02  n/a     .000
                    +     1.0 02:S-1-A         75.88    2.541 No_date   28:36   34.14  n/a     .000
                 SUM=     1.0 01:SN_FO      54118.36  113.639 No_date   33:28   28.94  n/a     .000
R0025:C00167------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_FO      54118.36  113.639 No_date   33:28   28.94  n/a     .000
      fname :SN_FO.0025
      remark:Total Flows at Foster Drain
# Hydrograph from Node Foster routed to Node at Cedarview Road
# Channel X-Section obtained from RVCA Hydraulic Model - Station 6016
#
R0025:C00168------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_FO      54118.36  113.639 No_date   33:28   28.94  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:N_CE       54118.36  113.515 No_date   33:32   28.94  n/a     .000
      [L/S/n=  159./ .082/.035]
      {Vmax= 1.423:Dmax= 3.806}
#***************************************************************************
#    Catchment S-1
#    - To Jock River (north and south of Jock)
#    - Primarily agricultural fields; portion of sand quarry
#***************************************************************************
R0025:C00169------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:S-1-B         55.36    2.311 No_date   28:23   34.14 .459     .000
      [CN= 77.0: N= 3.00: Tp=  .45]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
#    -  JFSA 2021-02-24 change the name from S-1-BCDC to S-1-A and S-1-B. Change their TP values based on the new areas
#    -  JFSA 2021-02-24 "S-1-BCDC-1" and "S-1-BCDC-2" are not existing anymore. "S-1-BCDC-1" is part of "S-1-FO-D2" and
#    -  JFSA 2021-01-19, after adding Greenbank pond, "S-1-BCDC-3" is not existing anymore
R0025:C00170------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-D1        21.67    3.385 No_date   28:01   57.38 .771     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .75:LGI= 380.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0025:C00171------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-D4         3.28     .581 No_date   28:00   57.38 .771     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .75:LGI= 148.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0025:C00172------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-D5        12.84    2.083 No_date   28:01   57.38 .771     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .75:LGI= 293.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0025:C00173------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-D6         1.75     .319 No_date   28:00   57.38 .771     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .75:LGI= 108.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0025:C00174------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-D7         2.03     .369 No_date   28:00   57.38 .771     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .75:LGI= 116.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
#    Catchment W_CLAR
#    - To West Clarke Drain (south of the Jock)
#    - Subdivision with 43% imp. as per Barrhaven South MSS
#    - 2020-11-30 update CLARKE Tributary Drainage Area to  = 121 ha based on P598(04)-11
#    - 2020-11-30 split CLARKE Drainage Area to MAJOR and ALL
#***************************************************************************
R0025:C00175------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:W_CLAR_MJ      1.77     .279 No_date   28:00   52.78 .709     .000
      [XIMP=.46:TIMP=.59]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 109.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
# 5-Year + 12% Capture
R0025:C00176------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:W_CLAR_MJ      1.77     .279 No_date   28:00   52.78  n/a     .000
                out <=    1.0 01:W_CLAR_MJn     1.73     .213 No_date   27:54   52.78  n/a     .000
           overflow <=    1.0 03:W_CLAR_MJj      .04     .062 No_date   28:01   52.78  n/a     .000
     {MxStoUsed=.1173E-03  m3, TotOvfVol=.2205E-02  m3, N-Ovf=    1, TotDurOvf=    0.hrs}
R0025:C00177------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:W_CLAR_ALL   119.40   15.305 No_date   28:04   56.82 .764     .000
      [XIMP=.60:TIMP=.65]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 892.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0025:C00178------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:W_CLAR_ALL   119.40   15.305 No_date   28:04   56.82  n/a     .000
                    +     1.0 02:W_CLAR_MJj      .04     .062 No_date   28:01   52.78  n/a     .000
                 SUM=     1.0 01:W_CLAR       119.44   15.305 No_date   28:04   56.81  n/a     .000
R0025:C00179------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:W_CLAR       119.44   15.305 No_date   28:04   56.81  n/a     .000
      fname :W_CLAR.0025
      remark:Total Flows to West Clarke
#***************************************************************************
#    West Clarke Pond 2
#    - Rating curve obtained from Barrhaven South MSS modeling
#    - Tributary Drainage Area to MSS Pond 2 = 241 ha
#***************************************************************************
R0025:C00180------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:W_CLAR       119.44   15.305 No_date   28:04   56.81  n/a     .000
                out <=    1.0 01:MS_P2        119.44    7.398 No_date   28:20   56.81  n/a     .000
           overflow <=    1.0 03:P2-OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.2962E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
#***************************************************************************
R0025:C00181------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N_CE       54118.36  113.515 No_date   33:32   28.94  n/a     .000
                    +     1.0 02:S-1-D4         3.28     .581 No_date   28:00   57.38  n/a     .000
                    +     1.0 02:S-1-D5        12.84    2.083 No_date   28:01   57.38  n/a     .000
                    +     1.0 02:MS_P2        119.44    7.398 No_date   28:20   56.81  n/a     .000
                    +     1.0 02:P2-OVF          .00     .000 No_date    0:00     .00  n/a     .000
                 SUM=     1.0 01:SN_CE      54253.92  114.400 No_date   33:32   29.01  n/a     .000
R0025:C00182------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_CE      54253.92  114.400 No_date   33:32   29.01  n/a     .000
      fname :SN_CE.0025
      remark:Total Flows before Station 5737 on Jock River
# Channel X-Section obtained from RVCA Hydraulic Model - Station 5737
# 2021-02-25 add station 5737 before station 5002. Station 5737 was extracted from the HEC-RAS model T:\PROJ\1474-16\Des
# JFSA 2021-03-02  change the slope to 0.0175% instead of 0.02593 to stabilize the model
R0025:C00183------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_CE      54253.92  114.400 No_date   33:32   29.01  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:5737       54253.92  107.664 No_date   36:05   29.01  n/a     .000
      [L/S/n=  270./ .018/.035]
      {Vmax=  .782:Dmax= 4.973}
R0025:C00184------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:5737       54253.92  107.664 No_date   36:05   29.01  n/a     .000
                    +     1.0 02:S-1-D1        21.67    3.385 No_date   28:01   57.38  n/a     .000
                    +     1.0 02:S-1-D6         1.75     .319 No_date   28:00   57.38  n/a     .000
                    +     1.0 02:S-1-D7         2.03     .369 No_date   28:00   57.38  n/a     .000
                 SUM=     1.0 01:5002       54279.37  107.746 No_date   36:02   29.03  n/a     .000
R0025:C00185------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:5002       54279.37  107.746 No_date   36:02   29.03  n/a     .000
      fname :5002.0025
      remark:Total Flows before Station 5002 on Jock River
# Hydrograph from Node Cedarview Road routed to Node at West Clarke Drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 5002
# JFSA 2021-02-19 Change the slope from 0.01 % (as per Stantec Report 2007) to 0.0255 % so the model will be more stable
# JFSA 2021-02-19 Change to three ROUTE CHANNEL with length 275 m each instead of one with 825 m length so the model wil
# JFSA 2021-02-26 change the length of 5002 route channel from 825 m to 736 m. That is because of adding station 5737 be
R0025:C00186------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:5002       54279.37  107.746 No_date   36:02   29.03  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:N_WCa      54279.37  107.733 No_date   36:08   29.03  n/a     .000
      [L/S/n=  245./ .095/.035]
      {Vmax= 1.210:Dmax= 2.778}
R0025:C00187------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:N_WCa      54279.37  107.733 No_date   36:08   29.03  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:N_WCb      54279.37  107.723 No_date   36:14   29.03  n/a     .000
      [L/S/n=  245./ .095/.035]
      {Vmax= 1.210:Dmax= 2.778}
R0025:C00188------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:N_WCb      54279.37  107.723 No_date   36:14   29.03  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:N_WC       54279.37  107.676 No_date   36:25   29.03  n/a     .000
      [L/S/n=  245./ .095/.035]
      {Vmax= 1.210:Dmax= 2.778}
#***************************************************************************
# Hydrograph from Node West Clarke routed to Node at Kennedy - Burnett Drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 4534
#
R0025:C00189------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:N_WC       54279.37  107.676 No_date   36:25   29.03  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:N_KB       54279.37  103.210 No_date   38:36   29.03  n/a     .000
      [L/S/n= 1020./ .050/.035]
      {Vmax= 1.073:Dmax= 3.484}
#***************************************************************************
#    Catchment KEN_BU
#    - To Kennedy-Burnett SWM Facility
#    - Outlets to Fraser-Clarke drain (north of the Jock)
#    - Medium density residential subdivision
#***************************************************************************
#***************************************************************************
#   Existing Kennedy-Burnett SWM Facility
#    - Rating curve obtained from URTKBP
#    - Tributary Drainage Area to Pond = 160 ha
#***************************************************************************
R0025:C00190------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-01A        40.82    4.186 No_date   28:11   29.35 .395     .000
      [XIMP=.10:TIMP=.40]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI= .50:LGI= 522.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00191------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-01A        40.82    4.186 No_date   28:11   29.35  n/a     .000
     Major System   /     1.0 02:KB-01A-MJ       .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-01A-MN     40.82    3.600 No_date   28:03   29.50  n/a     .000
      {MjSysSto=.3786E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00192------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-01A-MJ       .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:KB-01A-MN     40.82    3.600 No_date   28:03   29.50  n/a     .000
                 SUM=     1.0 01:KB-01A-S      40.82    3.600 No_date   28:03   29.50  n/a     .000
R0025:C00193------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-01B        31.10    3.068 No_date   28:07   32.30 .434     .000
      [XIMP=.19:TIMP=.38]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .42:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI= .42:LGI= 455.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00194------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-01B        31.10    3.068 No_date   28:07   32.30  n/a     .000
     Major System   /     1.0 02:KB-01B-MJ       .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-01B-MN     31.10    1.585 No_date   27:55   32.52  n/a     .000
      {MjSysSto=.1849E+04, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00195------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-01B-MJ       .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:KB-01B-MN     31.10    1.585 No_date   27:55   32.52  n/a     .000
                 SUM=     1.0 01:KB-01B-S      31.10    1.585 No_date   27:55   32.52  n/a     .000
R0025:C00196------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-01C        13.78    1.868 No_date   28:04   33.51 .450     .000
      [XIMP=.20:TIMP=.41]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI= .50:LGI= 303.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00197------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-01C        13.78    1.868 No_date   28:04   33.51  n/a     .000
     Major System   /     1.0 02:KB-01C-MJ       .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-01C-MN     13.78    1.350 No_date   27:57   33.69  n/a     .000
      {MjSysSto=.3173E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00198------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-01C-MJ       .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:KB-01C-MN     13.78    1.350 No_date   27:57   33.69  n/a     .000
                 SUM=     1.0 01:KB-01C-S      13.78    1.350 No_date   27:57   33.69  n/a     .000
R0025:C00199------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-03         84.78    9.657 No_date   28:08   32.97 .443     .000
      [XIMP=.20:TIMP=.39]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI= .63:LGI= 752.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00200------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-03         84.78    9.657 No_date   28:08   32.97  n/a     .000
     Major System   /     1.0 02:KB-03-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-03-MN      84.78    5.270 No_date   27:56   33.21  n/a     .000
      {MjSysSto=.4456E+04, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00201------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-03-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:KB-03-MN      84.78    5.270 No_date   27:56   33.21  n/a     .000
                 SUM=     1.0 01:KB-03-S       84.78    5.270 No_date   27:56   33.21  n/a     .000
```

```
R0025:C00202------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-04          6.95    1.434 No_date   28:00   65.29 .878      .000
      [XIMP=.85:TIMP=.85]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .94:SLPI= .50:LGI= 215.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00203------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-04          6.95    1.434 No_date   28:00   65.29  n/a      .000
     Major System   /     1.0 02:KB-04-MJ        .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:KB-04-MN       6.95     .503 No_date   27:45   65.54  n/a      .000
      {MjSysSto=.7689E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00204------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-04-MJ        .00     .000 No_date    0:00     .00  n/a      .000
                   +      1.0 02:KB-04-MN       6.95     .503 No_date   27:45   65.54  n/a      .000
                SUM=      1.0 01:KB-04-S        6.95     .503 No_date   27:45   65.54  n/a      .000
R0025:C00205------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-05          5.19    1.147 No_date   28:00   69.06 .928      .000
      [XIMP=.93:TIMP=.93]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 186.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00206------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-06         12.93    2.960 No_date   28:00   66.54 .895      .000
      [XIMP=.87:TIMP=.87]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .94:SLPI=4.75:LGI= 294.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00207------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-06         12.93    2.960 No_date   28:00   66.54  n/a      .000
     Major System   /     1.0 02:KB-06-MJ        .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:KB-06-MN      12.93    2.262 No_date   28:07   66.58  n/a      .000
      {MjSysSto=.2613E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00208------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-06-MJ        .00     .000 No_date    0:00     .00  n/a      .000
                   +      1.0 02:KB-06-MN      12.93    2.262 No_date   28:07   66.58  n/a      .000
                SUM=      1.0 01:KB-06-S       12.93    2.262 No_date   28:07   66.58  n/a      .000
R0025:C00209------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-11          4.03     .817 No_date   28:00   55.88 .751      .000
      [XIMP=.68:TIMP=.68]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI=2.00:LGI= 164.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00210------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-11          4.03     .817 No_date   28:00   55.88  n/a      .000
     Major System   /     1.0 02:KB-11-MJ        .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:KB-11-MN       4.03     .577 No_date   27:53   55.96  n/a      .000
      {MjSysSto=.9558E+02, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00211------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-11-MJ        .00     .000 No_date    0:00     .00  n/a      .000
                   +      1.0 02:KB-11-MN       4.03     .577 No_date   27:53   55.96  n/a      .000
                SUM=      1.0 01:KB-11-S        4.03     .577 No_date   27:53   55.96  n/a      .000
R0025:C00212------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S1             4.99    1.184 No_date   28:00   69.06 .928      .000
      [XIMP=.93:TIMP=.93]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=2.00:LGI= 182.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00213------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-15          2.15     .447 No_date   28:00   62.65 .842      .000
      [XIMP=.79:TIMP=.79]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .16:SLPI= .30:LGI= 120.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00214------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-01A-S      40.82    3.600 No_date   28:03   29.50  n/a      .000
                   +      1.0 02:KB-01B-S      31.10    1.585 No_date   27:55   32.52  n/a      .000
                   +      1.0 02:KB-01C-S      13.78    1.350 No_date   27:57   33.69  n/a      .000
                   +      1.0 02:KB-03-S       84.78    5.270 No_date   27:56   33.21  n/a      .000
                   +      1.0 02:KB-04-S        6.95     .503 No_date   27:45   65.54  n/a      .000
                   +      1.0 02:KB-05          5.19    1.147 No_date   28:00   69.06  n/a      .000
                   +      1.0 02:KB-06-S       12.93    2.262 No_date   28:07   66.58  n/a      .000
                   +      1.0 02:KB-11-S        4.03     .577 No_date   27:53   55.96  n/a      .000
                   +      1.0 02:KB-15          2.15     .447 No_date   28:00   62.65  n/a      .000
                   +      1.0 02:S1             4.99    1.184 No_date   28:00   69.06  n/a      .000
                SUM=      1.0 01:KB-P1        206.72   17.555 No_date   28:01   38.09  n/a      .000
R0025:C00215------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:KB-P1        206.72   17.555 No_date   28:01   38.09  n/a      .000
               out <=     1.0 01:KB-P1R       201.26   12.438 No_date   28:05   38.09  n/a      .000
          overflow <=     1.0 03:KB-P1ovf       5.46    4.400 No_date   28:05   38.09  n/a      .000
     {MxStoUsed=.7322E+00  m3, TotOvfVol=.2079E+00  m3, N-Ovf=    1, TotDurOvf=    0.hrs}
R0025:C00216------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-P1R       201.26   12.438 No_date   28:05   38.09  n/a      .000
                   +      1.0 02:KB-P1ovf       5.46    4.400 No_date   28:05   38.09  n/a      .000
                SUM=      1.0 01:KB-Pond1     206.72   16.838 No_date   28:05   38.09  n/a      .000
R0025:C00217------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:KB-Pond1     206.72   16.838 No_date   28:05   38.09  n/a      .000
      fname :KB-Pond1.0025
      remark:Total Flows at KB first pond
R0025:C00218------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-07         10.86    2.392 No_date   28:00   65.97 .887      .000
      [XIMP=.86:TIMP=.86]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI=2.00:LGI= 269.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00219------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-07         10.86    2.392 No_date   28:00   65.97  n/a      .000
     Major System   /     1.0 02:KB-07-MJ        .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:KB-07-MN      10.86    2.094 No_date   27:56   66.02  n/a      .000
      {MjSysSto=.7523E+02, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00220------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-07-MJ        .00     .000 No_date    0:00     .00  n/a      .000
                   +      1.0 02:KB-07-MN      10.86    2.094 No_date   27:56   66.02  n/a      .000
                SUM=      1.0 01:KB-07-S       10.86    2.094 No_date   27:56   66.02  n/a      .000
R0025:C00221------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-08          6.61    1.292 No_date   28:00   53.97 .726      .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI=2.00:LGI= 210.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00222------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-08          6.61    1.292 No_date   28:00   53.97  n/a      .000
     Major System   /     1.0 02:KB-08-MJ        .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:KB-08-MN       6.61    1.058 No_date   27:55   54.34  n/a      .000
      {MjSysSto=.6817E+02, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00223------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-08-MJ        .00     .000 No_date    0:00     .00  n/a      .000
                   +      1.0 02:KB-08-MN       6.61    1.058 No_date   27:55   54.34  n/a      .000
                SUM=      1.0 01:KB-08-S        6.61    1.058 No_date   27:55   54.34  n/a      .000
R0025:C00224------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-09          2.60     .599 No_date   28:00   65.30 .878      .000
      [XIMP=.86:TIMP=.86]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=2.00:LGI= 132.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00225------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-10_1        2.37     .550 No_date   28:00   65.30 .878      .000
      [XIMP=.86:TIMP=.86]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=2.00:LGI= 126.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00226------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-10_2        1.14     .266 No_date   28:00   65.30 .878      .000
      [XIMP=.86:TIMP=.86]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=2.00:LGI=  87.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00227------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-12          4.86    1.059 No_date   28:00   61.90 .832      .000
      [XIMP=.79:TIMP=.79]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.10:SLPI=2.00:LGI= 180.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00228------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-12          4.86    1.059 No_date   28:00   61.90  n/a      .000
     Major System   /     1.0 02:KB-12-MJ        .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:KB-12-MN       4.86     .867 No_date   27:54   62.20  n/a      .000
      {MjSysSto=.6022E+02, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00229------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-12-MJ        .00     .000 No_date    0:00     .00  n/a      .000
                   +      1.0 02:KB-12-MN       4.86     .867 No_date   27:54   62.20  n/a      .000
                SUM=      1.0 01:KB-12-S        4.86     .867 No_date   27:54   62.20  n/a      .000
R0025:C00230------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-13         10.19    1.930 No_date   28:00   53.97 .726      .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI=2.00:LGI= 261.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00231------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-13         10.19    1.930 No_date   28:00   53.97  n/a      .000
     Major System   /     1.0 02:KB-13-MJ        .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:KB-13-MN      10.19    1.722 No_date   27:57   53.98  n/a      .000
      {MjSysSto=.4703E+02, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00232------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-13-MJ        .00     .000 No_date    0:00     .00  n/a      .000
                   +      1.0 02:KB-13-MN      10.19    1.722 No_date   27:57   53.98  n/a      .000
                SUM=      1.0 01:KB-13-S       10.19    1.722 No_date   27:57   53.98  n/a      .000
R0025:C00233------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-14          5.47    1.075 No_date   28:00   53.97 .726      .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI=2.00:LGI= 191.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00234------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-14          5.47    1.075 No_date   28:00   53.97  n/a      .000
     Major System   /     1.0 02:KB-14-MJ        .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:KB-14-MN       5.47     .873 No_date   27:55   54.32  n/a      .000
      {MjSysSto=.6018E+02, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00235------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-14-MJ        .00     .000 No_date    0:00     .00  n/a      .000
                   +      1.0 02:KB-14-MN       5.47     .873 No_date   27:55   54.32  n/a      .000
                SUM=      1.0 01:KB-14-S        5.47     .873 No_date   27:55   54.32  n/a      .000
R0025:C00236------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-16_2        3.42     .649 No_date   28:01   58.24 .783      .000
      [XIMP=.71:TIMP=.71]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .16:SLPI= .30:LGI= 151.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00237------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-Pond1     206.72   16.838 No_date   28:05   38.09  n/a      .000
                   +      1.0 02:KB-07-S       10.86    2.094 No_date   27:56   66.02  n/a      .000
                   +      1.0 02:KB-08-S        6.61    1.058 No_date   27:55   54.34  n/a      .000
                   +      1.0 02:KB-09          2.60     .599 No_date   28:00   65.30  n/a      .000
                   +      1.0 02:KB-10_1        2.37     .550 No_date   28:00   65.30  n/a      .000
                   +      1.0 02:KB-10_2        1.14     .266 No_date   28:00   65.30  n/a      .000
                   +      1.0 02:KB-12-S        4.86     .867 No_date   27:54   62.20  n/a      .000
                   +      1.0 02:KB-13-S       10.19    1.722 No_date   27:57   53.98  n/a      .000
                   +      1.0 02:KB-14-S        5.47     .873 No_date   27:55   54.32  n/a      .000
                   +      1.0 02:KB-16_2        3.42     .649 No_date   28:01   58.24  n/a      .000
                SUM=      1.0 01:KB-P2        254.24   24.423 No_date   28:05   42.08  n/a      .000
R0025:C00238------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:KB-P2        254.24   24.423 No_date   28:05   42.08  n/a      .000
               out <=     1.0 01:KB-P2R       254.24   17.126 No_date   28:11   42.08  n/a      .000
          overflow <=     1.0 03:KB-P2ovf        .00     .000 No_date    0:00     .00  n/a      .000
     {MxStoUsed=.9755E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00239------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-P2R       254.24   17.126 No_date   28:11   42.08  n/a      .000
                   +      1.0 02:KB-P2ovf        .00     .000 No_date    0:00     .00  n/a      .000
                SUM=      1.0 01:KB-Pond2     254.24   17.126 No_date   28:11   42.08  n/a      .000
R0025:C00240------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:KB-Pond2     254.24   17.126 No_date   28:11   42.08  n/a      .000
      fname :KB-Pond2.0025
      remark:Total Flows at KB second pond
R0025:C00241------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-16_1        2.80     .551 No_date   28:01   60.44 .812      .000
      [XIMP=.75:TIMP=.75]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .16:SLPI= .30:LGI= 137.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00242------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-Pond2     254.24   17.126 No_date   28:11   42.08  n/a      .000
                   +      1.0 02:KB-16_1        2.80     .551 No_date   28:01   60.44  n/a      .000
                SUM=      1.0 01:KB-P3        257.04   17.347 No_date   28:10   42.28  n/a      .000
R0025:C00243------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:KB-P3        257.04   17.347 No_date   28:10   42.28  n/a      .000
               out <=     1.0 01:KB-P3R        10.42     .051 No_date   17:19   42.28  n/a      .000
          overflow <=     1.0 03:KB-P3ovf     246.62   17.293 No_date   28:10   42.28  n/a      .000
     {MxStoUsed=.1993E-02  m3, TotOvfVol=.1043E+02  m3, N-Ovf=    2, TotDurOvf=   23.hrs}
R0025:C00244------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-P3R        10.42     .051 No_date   17:19   42.28  n/a      .000
                   +      1.0 02:KB-P3ovf     246.62   17.293 No_date   28:10   42.28  n/a      .000
                SUM=      1.0 01:KB-Pond3     257.04   17.344 No_date   28:10   42.28  n/a      .000
R0025:C00245------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:KB-Pond3     257.04   17.344 No_date   28:10   42.28  n/a      .000
      fname :KB-Pond3.0025
      remark:Total Flows at KB third pond
#******************************************************************************
#    EXISTING / PROPOSED Subcatchments (Kennedy-Burnett SWM Facility (118080), SWM Modeling Approach, NOVATECH Report Ju
#    - TO FRASER-CLARKE DRAIN
#******************************************************************************
R0025:C00246------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:FC-01          8.03    1.288 No_date   28:01   44.33 .596      .000
      [XIMP=.47:TIMP=.47]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 231.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00247------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:FC-01          8.03    1.288 No_date   28:01   44.33  n/a      .000
     Major System   /     1.0 02:FC-01-MJ        .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:FC-01-MN       8.03     .756 No_date   28:25   44.53  n/a      .000
      {MjSysSto=.2943E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00248------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:FC-01-MJ        .00     .000 No_date    0:00     .00  n/a      .000
                   +      1.0 02:FC-01-MN       8.03     .756 No_date   27:53   44.53  n/a      .000
                SUM=      1.0 01:FC-01-S        8.03     .756 No_date   27:53   44.53  n/a      .000
R0025:C00249------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:FC-02         16.05    3.458 No_date   28:00   69.06 .928      .000
      [XIMP=.93:TIMP=.93]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 327.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00250------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:FC-02         16.05    3.458 No_date   28:00   69.06  n/a      .000
     Major System   /     1.0 02:FC-02-MJ        .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:FC-02-MN      16.05    1.159 No_date   27:44   69.13  n/a      .000
      {MjSysSto=.1941E+04, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00251------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:FC-02-MJ        .00     .000 No_date    0:00     .00  n/a      .000
                   +      1.0 02:FC-02-MN      16.05    1.159 No_date   27:44   69.13  n/a      .000
                SUM=      1.0 01:FC-02-S       16.05    1.159 No_date   27:44   69.13  n/a      .000
R0025:C00252------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:FC-03          7.37    1.375 No_date   28:00   53.47 .719      .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 222.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00253------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:FC-03          7.37    1.375 No_date   28:00   53.47  n/a      .000
     Major System   /     1.0 02:FC-03-MJ        .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:FC-03-MN       7.37     .358 No_date   27:43   53.66  n/a      .000
      {MjSysSto=.9407E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00254------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:FC-03-MJ        .00     .000 No_date    0:00     .00  n/a      .000
                   +      1.0 02:FC-03-MN       7.37     .358 No_date   27:43   53.66  n/a      .000
                SUM=      1.0 01:FC-03-S        7.37     .358 No_date   27:43   53.66  n/a      .000
R0025:C00255------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:FC-04         12.87    2.308 No_date   28:01   53.47 .719      .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 293.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00256------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:FC-04         12.87    2.308 No_date   28:01   53.47  n/a      .000
     Major System   /     1.0 02:FC-04-MJ        .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:FC-04-MN      12.87     .741 No_date   27:45   53.74  n/a      .000
      {MjSysSto=.1387E+04, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00257------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:FC-04-MJ        .00     .000 No_date    0:00     .00  n/a      .000
                   +      1.0 02:FC-04-MN      12.87     .741 No_date   27:45   53.74  n/a      .000
                SUM=      1.0 01:FC-04-S       12.87     .741 No_date   27:45   53.74  n/a      .000
#******************************************************************************
#    PROPOSED Subcatchments (Kennedy-Burnett SWM Facility (118080), SWM Modeling Approach, NOVATECH Report June, 2020)
#    - TO JOCK RIVER
#******************************************************************************
R0025:C00258------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:JR-01          8.24    1.515 No_date   28:00   53.47 .719      .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 234.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00259------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:JR-01          8.24    1.515 No_date   28:00   53.47  n/a      .000
     Major System   /     1.0 02:JR-01-MJ        .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:JR-01-MN       8.24     .563 No_date   28:50   53.74  n/a      .000
      {MjSysSto=.7433E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00260------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:JR-01-MJ        .00     .000 No_date    0:00     .00  n/a      .000
                   +      1.0 02:JR-01-MN       8.24     .563 No_date   27:45   53.74  n/a      .000
                SUM=      1.0 01:JR-01-S        8.24     .563 No_date   27:45   53.74  n/a      .000
R0025:C00261------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:JR-02          1.59     .316 No_date   28:00   53.47 .719      .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 103.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00262------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:JR-02          1.59     .316 No_date   28:00   53.47  n/a      .000
     Major System   /     1.0 02:JR-02-MJ        .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:JR-02-MN       1.59     .153 No_date   27:47   53.69  n/a      .000
      {MjSysSto=.9432E+02, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00263------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:JR-02-MJ        .00     .000 No_date    0:00     .00  n/a      .000
                   +      1.0 02:JR-02-MN       1.59     .153 No_date   27:47   53.69  n/a      .000
                SUM=      1.0 01:JR-02-S        1.59     .153 No_date   27:47   53.69  n/a      .000
#******************************************************************************
#    Catchment FRASER
#    - To Fraser-Clarke drain (north of the Jock)
#    - Developed land with assumed 43% imp.
#    - 2020-12-17 Change Fraser area to be 35.1 as measured from QGIS
#    - 2020-12-17 All Fraser is undeveloped (Nashyd)
#******************************************************************************
R0025:C00264------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:FRASER-DRN    13.65     .594 No_date   28:22   34.14 .459      .000
      [CN= 77.0: N= 3.00: Tp=  .43]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0025:C00265------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:FRASER-D      21.61    3.258 No_date   28:01   56.29 .757      .000
      [XIMP=.58:TIMP=.58]
      [LOSS= 2 :CN= 80.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 380.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
```

```
      [SMIN= 26.32: SMAX=175.50: SK= .010]
R0025:C00266-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:FRASER-D      21.61    3.258 No_date   28:01   56.29  n/a     .000
     Major System   /     1.0 02:FRASER-J        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:FRASER-N      21.61    2.281 No_date   27:55   56.43  n/a     .000
      {MjSysSto=.4729E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00267-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:FRASER-J        .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:FRASER-N      21.61    2.281 No_date   27:55   56.43  n/a     .000
                  SUM=    1.0 01:FRASER-S      21.61    2.281 No_date   27:55   56.43  n/a     .000
R0025:C00268-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-Pond3     257.04   17.344 No_date   28:10   42.28  n/a     .000
                    +     1.0 02:S-1-B         55.36    2.311 No_date   28:23   34.14  n/a     .000
                    +     1.0 02:FRASER-DRN    13.65     .594 No_date   28:22   34.14  n/a     .000
                    +     1.0 02:FRASER-S      21.61    2.281 No_date   27:55   56.43  n/a     .000
                    +     1.0 02:N_KB       54279.37  103.210 No_date   38:36   29.03  n/a     .000
                    +     1.0 02:FC-01-S        8.03     .756 No_date   27:53   44.53  n/a     .000
                    +     1.0 02:FC-02-S       16.05    1.159 No_date   27:44   69.13  n/a     .000
                    +     1.0 02:FC-03-S        7.37     .358 No_date   27:43   53.66  n/a     .000
                  SUM=    1.0 01:4241       54658.48  103.701 No_date   38:36   29.12  n/a     .000
R0025:C00269-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:4241       54658.48  103.701 No_date   38:36   29.12  n/a     .000
      fname :4241.0025
      remark:Total Flows at Ken-Burnett Outlet
# Hydrograph from Node Ken-Burnett to station 3633
# Channel X-Section obtained from RVCA Hydraulic Model - Station 4241
#
R0025:C00270-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:4241       54658.48  103.701 No_date   38:36   29.12  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:4241-out   54658.48  103.716 No_date   38:34   29.12  n/a     .000
      [L/S/n=  294./ .109/.035]
      {Vmax= 1.254:Dmax= 2.210}
R0025:C00271-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:4241-out   54658.48  103.716 No_date   38:34   29.12  n/a     .000
                    +     1.0 02:FC-04-S       12.87     .741 No_date   27:45   53.74  n/a     .000
                    +     1.0 02:JR-01-S        8.24     .563 No_date   27:45   53.74  n/a     .000
                    +     1.0 02:JR-02-S        1.59     .153 No_date   27:47   53.69  n/a     .000
                  SUM=    1.0 01:SN_KB      54681.18  103.751 No_date   38:34   29.13  n/a     .000
R0025:C00272-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_KB      54681.18  103.751 No_date   38:34   29.13  n/a     .000
      fname :SN_KB.0025
      remark:HYD_COMMENT=["Total Flows before Station 3633]
# Hydrograph from Station 3633 to Node Todd
# Channel X-Section obtained from RVCA Hydraulic Model - Station 3633
# JFSA 2021-02-26 change the channel length (at station 3633) from 650m to 608m and change the slope from 0.0498% to 0.2
#
R0025:C00273-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_KB      54681.18  103.751 No_date   38:34   29.13  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N_TO       54681.18  103.735 No_date   38:38   29.13  n/a     .000
      [L/S/n=  608./ .247/.035]
      {Vmax= 1.675:Dmax= 1.657}
#******************************************************************************
#    Catchment Greenbank
#    - To Greenbank Drain (south of the Jock)
#    - JFSA 2021-01-18 add Greenbank pond as per JFSA, P598(06)-15, June 2016
#    - JFSA 2021-01-19 update area from 37.479 ha to 36.6 ha based on GIS measurements
#******************************************************************************
R0025:C00274-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:Greenbank     36.60    5.574 No_date   28:02   58.33 .784     .000
      [XIMP=.64:TIMP=.68]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 494.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0025:C00275-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:Greenbank     36.60    5.574 No_date   28:02   58.33  n/a     .000
                 out <=   1.0 01:GreenB_MN     36.60    3.118 No_date   28:11   58.33  n/a     .000
            overflow <=   1.0 03:GreenB_MJ       .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.8739E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00276-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N_TO       54681.18  103.735 No_date   38:38   29.13  n/a     .000
                    +     1.0 02:GreenB_MJ       .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:GreenB_MN     36.60    3.118 No_date   28:11   58.33  n/a     .000
                  SUM=    1.0 01:GreenB     54717.78  103.842 No_date   38:38   29.15  n/a     .000
R0025:C00277-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:GreenB     54717.78  103.842 No_date   38:38   29.15  n/a     .000
      fname :GreenB.0025
      remark:Total Flows at Greenbank Drain
#******************************************************************************
#    Catchment TODD
#    - To Todd Drain (south of the Jock)
#    - Subdivision with 43% imp. as per Barrhaven South MSS
#    - 2020-11-30 increase imp. based on P598(04)-11
#    - 2020-11-30 update TODD Tributary Drainage Area to  = 146.015 ha based on P598(04)-11
#    - 2020-11-30 split TODD Drainage Area to MAJOR, MINOR, POND and ALL
#******************************************************************************
#    - JFSA 2021-01-19 add "TODD_MN1" as part of Clarke("W_CLAR_MJ") and remove it from Todd
R0025:C00278-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:TODD_MN2       2.10     .339 No_date   28:00   53.59 .720     .000
      [XIMP=.53:TIMP=.57]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 118.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0025:C00279-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:TODD_MN3        .12     .020 No_date   28:00   53.57 .720     .000
      [XIMP=.53:TIMP=.57]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI=  28.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0025:C00280-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:TODD_MJ       30.23    4.269 No_date   28:02   55.13 .741     .000
      [XIMP=.52:TIMP=.64]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 449.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0025:C00281-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:TODD_ALL     112.91   13.312 No_date   28:05   53.38 .718     .000
      [XIMP=.52:TIMP=.57]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 868.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0025:C00282-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:TODD_P         3.06     .535 No_date   28:00   57.01 .766     .000
      [XIMP=.63:TIMP=.63]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 143.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
# 5-Year + 12% Capture
R0025:C00283-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:TODD_MJ       30.23    4.269 No_date   28:02   55.13  n/a     .000
                 out <=   1.0 01:TODD_MJn      29.48    3.314 No_date   27:57   55.13  n/a     .000
            overflow <=   1.0 03:TODD_MJj        .75     .946 No_date   28:03   55.13  n/a     .000
     {MxStoUsed=.1175E-03  m3, TotOvfVol=.4153E-01  m3, N-Ovf=    1, TotDurOvf=    0.hrs}
# 5-Year + 12% Capture
R0025:C00284-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:TODD_MN2       2.10     .339 No_date   28:00   53.59  n/a     .000
                 out <=   1.0 01:TODD_MN2n      2.06     .268 No_date   27:54   53.60  n/a     .000
            overflow <=   1.0 03:TODD_MN2j       .04     .067 No_date   28:00   53.59  n/a     .000
     {MxStoUsed=.8415E-04  m3, TotOvfVol=.2217E-02  m3, N-Ovf=    1, TotDurOvf=    0.hrs}
R0025:C00285-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:TODD_MN3        .12     .020 No_date   28:00   53.58  n/a     .000
                 out <=   1.0 01:TODD_MN3n       .11     .016 No_date   27:53   53.58  n/a     .000
            overflow <=   1.0 03:TODD_MN3j       .00     .004 No_date   28:00   53.58  n/a     .000
     {MxStoUsed=.1067E-03  m3, TotOvfVol=.1192E-03  m3, N-Ovf=    1, TotDurOvf=    0.hrs}
R0025:C00286-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A2            25.50    2.974 No_date   28:03   49.44 .665     .000
      [XIMP=.42:TIMP=.52]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 566.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0025:C00287-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A2            25.50    2.974 No_date   28:03   49.44  n/a     .000
     Major System   /     1.0 02:A2-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A2-MN         25.50    1.818 No_date   27:54   49.64  n/a     .000
      {MjSysSto=.8120E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00288-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:TODD_MN2n      2.06     .268 No_date   27:54   53.60  n/a     .000
                    +     1.0 02:TODD_MN3n       .11     .016 No_date   27:53   53.58  n/a     .000
                    +     1.0 02:TODD_MJj        .75     .946 No_date   28:03   55.13  n/a     .000
                    +     1.0 02:TODD_P         3.06     .535 No_date   28:00   57.01  n/a     .000
                    +     1.0 02:TODD_ALL     112.91   13.312 No_date   28:05   53.38  n/a     .000
                    +     1.0 02:W_CLAR_MJn     1.73     .213 No_date   27:54   52.78  n/a     .000
                  SUM=    1.0 01:TODD         120.62   14.962 No_date   28:03   53.48  n/a     .000
R0025:C00289-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:TODD         120.62   14.962 No_date   28:03   53.48  n/a     .000
      fname :TODD.0025
      remark:Total Flows at Todd Drain
#******************************************************************************
#    Todd Pond 3
#    - Rating curve obtained from Barrhaven South MSS modeling
#    - stantec 2007, Tributary Drainage Area to MSS Pond 3 = 193 ha
#******************************************************************************
R0025:C00290-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:TODD         120.62   14.962 No_date   28:03   53.48  n/a     .000
                 out <=   1.0 01:MS_P3        120.62    9.717 No_date   28:14   53.48  n/a     .000
            overflow <=   1.0 03:P3-OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.2619E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00291-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:GreenB     54717.78  103.842 No_date   38:38   29.15  n/a     .000
                    +     1.0 02:MS_P3        120.62    9.717 No_date   28:14   53.48  n/a     .000
                    +     1.0 02:P3-OVF          .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:TODD_MN2j       .04     .067 No_date   28:00   53.59  n/a     .000
                    +     1.0 02:A2-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                  SUM=    1.0 01:SN_TO      54838.44  104.100 No_date   38:38   29.21  n/a     .000
R0025:C00292-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_TO      54838.44  104.100 No_date   38:38   29.21  n/a     .000
      fname :SN_TO.0025
      remark:Total Flows at Todd Drain
#
# Hydrograph from Todd Drain routed to Corrigan Drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 2462
# 2021-02-19 Change the slope from 0.033 % (as per Stantec Report 2007) to 0.05 % so the model will be more stable and g
R0025:C00293-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_TO      54838.44  104.100 No_date   38:38   29.21  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:N_TO       54838.44  104.039 No_date   38:49   29.21  n/a     .000
      [L/S/n=  280./ .050/.045]
      {Vmax=  .905:Dmax= 3.154}
R0025:C00294-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:N_TO       54838.44  104.039 No_date   38:49   29.21  n/a     .000
      fname :N_TO.0025
      remark:Total inflows at Station 2462
#******************************************************************************
#    Catchment CORRIG
#    - To Corrigan Drain (south of the Jock)
#    - Primarily Developed (medium density)
#    - JFSA JAN 2021, add Corrigan subcatchments as per IBI, July 2008
#******************************************************************************
R0025:C00295-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:corr1         15.87    2.535 No_date   28:01   57.01 .766     .000
      [XIMP=.63:TIMP=.63]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 325.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0025:C00296-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:corr1         15.87    2.535 No_date   28:01   57.01  n/a     .000
     Major System   /     1.0 02:corr1-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:corr1-MN      15.87    1.818 No_date   28:15   57.37  n/a     .000
      {MjSysSto=.3150E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00297-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:corr2         12.47     .276 No_date   29:10   34.14 .459     .000
      [CN= 77.0: N= 3.00: Tp= 1.10]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0025:C00298-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A1-Corrig     15.75    2.022 No_date   28:01   49.44 .665     .000
      [XIMP=.42:TIMP=.52]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 324.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0025:C00299-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A1-Corrig     15.75    2.022 No_date   28:01   49.44  n/a     .000
     Major System   /     1.0 02:A1-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A1-MN         15.75    1.818 No_date   27:58   49.57  n/a     .000
      {MjSysSto=.4966E+02, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00300-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:B1             2.77     .097 No_date   28:09   21.19 .285     .000
      [CN= 56.0: N= 3.00: Tp=  .23]
      [IaREC= 4.00: SMIN= 79.69: SMAX=531.24: SK= .010]
      [InterEventTime=  12.00]
R0025:C00301-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A4             1.27     .212 No_date   28:01   57.38 .771     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 253.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0025:C00302-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A4             1.27     .212 No_date   28:01   57.38  n/a     .000
     Major System   /     1.0 02:A4-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A4-MN          1.27     .212 No_date   28:01   57.38  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00303-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:A1-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:A1-MN         15.75    1.818 No_date   27:58   49.57  n/a     .000
                    +     1.0 02:corr1-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:corr1-MN      15.87    1.818 No_date   28:15   57.37  n/a     .000
                    +     1.0 02:corr2         12.47     .276 No_date   29:10   34.14  n/a     .000
                    +     1.0 02:B1             2.77     .097 No_date   28:09   21.19  n/a     .000
                    +     1.0 02:A4-MN          1.27     .212 No_date   28:01   57.38  n/a     .000
                  SUM=    1.0 01:MH101         48.13    3.979 No_date   28:02   46.72  n/a     .000
R0025:C00304-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH101         48.13    3.979 No_date   28:02   46.72  n/a     .000
      fname :MH101.0025
      remark:Total Flows at MH101
R0025:C00305-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH101         48.13    3.979 No_date   28:02   46.72  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:101-102       48.13    3.953 No_date   28:05   46.72  n/a     .000
      [L/S/n=  368./ .540/.013]
      {Vmax= 3.134:Dmax= 1.114}
      [Din= 1.05:Dused= 1.36}
R0025:C00306-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:A2-MN         25.50    1.818 No_date   27:54   49.64  n/a     .000
                    +     1.0 02:101-102       48.13    3.953 No_date   28:05   46.72  n/a     .000
                  SUM=    1.0 01:MH102         73.63    5.771 No_date   28:05   47.73  n/a     .000
R0025:C00307-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH102         73.63    5.771 No_date   28:05   47.73  n/a     .000
      fname :MH102.0025
      remark:Total Flows at MH102
R0025:C00308-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A5             1.60     .279 No_date   28:01   60.02 .807     .000
      [XIMP=.71:TIMP=.71]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 300.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0025:C00309-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:A4-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:A5             1.60     .279 No_date   28:01   60.02  n/a     .000
                  SUM=    1.0 01:A5T            1.60     .279 No_date   28:01   60.02  n/a     .000
R0025:C00310-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A5T            1.60     .279 No_date   28:01   60.02  n/a     .000
     Major System   /     1.0 02:A5-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A5-MN          1.60     .279 No_date   28:01   60.02  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00311-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH102         73.63    5.771 No_date   28:05   47.73  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:102-103       73.63    5.682 No_date   28:08   47.73  n/a     .000
      [L/S/n=  504./ .280/.013]
      {Vmax= 2.688:Dmax= 1.448}
      [Din= 1.50:Dused= 1.76}
R0025:C00312-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:102-103       73.63    5.682 No_date   28:08   47.73  n/a     .000
                    +     1.0 02:A5-MN          1.60     .279 No_date   28:01   60.02  n/a     .000
                  SUM=    1.0 01:MH103         75.23    5.850 No_date   28:06   47.99  n/a     .000
R0025:C00313-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH103         75.23    5.850 No_date   28:06   47.99  n/a     .000
      fname :MH103.0025
      remark:Total Flows at MH103
R0025:C00314-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH103         75.23    5.850 No_date   28:06   47.99  n/a     .000
     [RDT= 1.00] out<-    1.0 01:103-104       75.23    5.807 No_date   28:08   47.99  n/a     .000
      [L/S/n=  438./ .460/.013]
      {Vmax= 3.289:Dmax= 1.280}
      [Din= 1.65:Dused= 1.65}
R0025:C00315-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A6             1.56     .274 No_date   28:00   60.02 .807     .000
      [XIMP=.71:TIMP=.71]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 280.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0025:C00316-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:A5-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:A6             1.56     .274 No_date   28:00   60.02  n/a     .000
                  SUM=    1.0 01:A6T            1.56     .274 No_date   28:00   60.02  n/a     .000
R0025:C00317-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A6T            1.56     .274 No_date   28:00   60.02  n/a     .000
     Major System   /     1.0 02:A6-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A6-MN          1.56     .274 No_date   28:00   60.02  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00318-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:A6-MN          1.56     .274 No_date   28:00   60.02  n/a     .000
                    +     1.0 02:103-104       75.23    5.807 No_date   28:08   47.99  n/a     .000
                    +     1.0 02:TODD_MJn      29.48    3.314 No_date   27:57   55.13  n/a     .000
                  SUM=    1.0 01:MH104        106.27    9.269 No_date   28:06   50.14  n/a     .000
R0025:C00319-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH104        106.27    9.269 No_date   28:06   50.14  n/a     .000
      fname :MH104.0025
      remark:Total Flows at MH104
R0025:C00320-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:B2            12.31    1.521 No_date   28:02   49.75 .669     .000
      [XIMP=.41:TIMP=.54]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 417.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0025:C00321-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:B2            12.31    1.521 No_date   28:02   49.75  n/a     .000
     Major System   /     1.0 02:B2-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:B2-MN         12.31    1.029 No_date   27:55   49.85  n/a     .000
      {MjSysSto=.2691E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00322-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:B2-MN         12.31    1.029 No_date   27:55   49.85  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:315-333       12.31    1.029 No_date   28:24   49.85  n/a     .000
      [L/S/n=  254./ .100/.013]
      {Vmax= 1.220:Dmax=  .838}
      [Din= 1.20:Dused= 1.20}
R0025:C00323-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:B3             5.59     .715 No_date   28:02   49.75 .669     .000
      [XIMP=.41:TIMP=.54]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 345.:MNI=.013:SCI=   .0]
```

```
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 33.81: SMAX=225.43: SK= .010]
 R0025:C00324------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     COMPUTE DUALHYD       1.0 01:B3            5.59     .715 No_date   28:02   49.75  n/a     .000
      Major System   /     1.0 02:B3-MJ          .00     .000 No_date    0:00     .00  n/a     .000
      Minor System   \     1.0 03:B3-MN         5.59     .459 No_date   27:54   49.80  n/a     .000
       {MjSysSto=.1451E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
 R0025:C00325------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:B3-MN         5.59     .459 No_date   27:54   49.80  n/a     .000
                     +     1.0 02:315-333      12.31    1.029 No_date   28:24   49.85  n/a     .000
                  SUM=     1.0 01:MH333        17.90    1.488 No_date   28:24   49.83  n/a     .000
 R0025:C00326------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     SAVE HYD              1.0 01:MH333        17.90    1.488 No_date   28:24   49.83  n/a     .000
       fname :MH333.0025
       remark:Total Flows at MH333
 R0025:C00327------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE PIPE      ->    1.0 02:MH333        17.90    1.488 No_date   28:24   49.83  n/a     .000
  *   [RDT= 1.00] out<-    1.0 01:333-335      17.90    1.485 No_date   28:24   49.83  n/a     .000
       [L/S/n=  251./ .100/.013]
       {Vmax= 1.302:Dmax= 1.057}
       [Din= 1.20:Dused= 1.29}
 R0025:C00328------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE PIPE      ->    1.0 02:333-335      17.90    1.485 No_date   28:24   49.83  n/a     .000
  *   [RDT= 1.00] out<-    1.0 01:335-338      17.90    1.490 No_date   28:26   49.83  n/a     .000
       [L/S/n=  185./ .100/.013]
       {Vmax= 1.301:Dmax= 1.056}
       [Din= 1.20:Dused= 1.29}
 R0025:C00329------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE PIPE      ->    1.0 02:335-338      17.90    1.490 No_date   28:26   49.83  n/a     .000
      [RDT= 1.00] out<-    1.0 01:338-340      17.90    1.456 No_date   28:26   49.83  n/a     .000
       [L/S/n=  233./ .100/.013]
       {Vmax= 1.331:Dmax=  .985}
       [Din= 1.35:Dused= 1.35}
 R0025:C00330------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:B4            7.60     .960 No_date   28:02   49.75 .669     .000
       [XIMP=.41:TIMP=.54]
       [LOSS= 2 :CN= 75.0]
       [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 388.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 33.81: SMAX=225.43: SK= .010]
 R0025:C00331------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     COMPUTE DUALHYD       1.0 01:B4            7.60     .960 No_date   28:02   49.75  n/a     .000
      Major System   /     1.0 02:B4-MJ          .00     .000 No_date    0:00     .00  n/a     .000
      Minor System   \     1.0 03:B4-MN         7.60     .655 No_date   27:55   50.00  n/a     .000
       {MjSysSto=.1611E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
 R0025:C00332------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:338-340      17.90    1.456 No_date   28:26   49.83  n/a     .000
                     +     1.0 02:B4-MN         7.60     .655 No_date   27:55   50.00  n/a     .000
                  SUM=     1.0 01:MH340        25.50    2.104 No_date   28:18   49.88  n/a     .000
 R0025:C00333------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     SAVE HYD              1.0 01:MH340        25.50    2.104 No_date   28:18   49.88  n/a     .000
       fname :MH340.0025
       remark:Total Flows at MH340
 R0025:C00334------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE PIPE      ->    1.0 02:MH340        25.50    2.104 No_date   28:18   49.88  n/a     .000
      [RDT= 1.00] out<-    1.0 01:340-104      25.50    2.086 No_date   28:18   49.88  n/a     .000
       [L/S/n=  240./ .150/.013]
       {Vmax= 1.722:Dmax=  .917}
       [Din= 1.65:Dused= 1.65}
 R0025:C00335------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:340-104      25.50    2.086 No_date   28:18   49.88  n/a     .000
                     +     1.0 02:MH104       106.27    9.269 No_date   28:06   50.14  n/a     .000
                  SUM=     1.0 01:MH104T      131.77   11.233 No_date   28:08   50.09  n/a     .000
 R0025:C00336------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE PIPE      ->    1.0 02:MH104T      131.77   11.233 No_date   28:08   50.09  n/a     .000
  *   [RDT= 1.00] out<-    1.0 01:104-105     131.77   10.846 No_date   28:08   50.09  n/a     .000
       [L/S/n=  380./ .100/.013]
       {Vmax= 2.100:Dmax= 1.992}
       {HGTH= 2.35:WDTH= 2.68}
 R0025:C00337------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:B5            2.20     .346 No_date   28:00   53.85 .724     .000
       [XIMP=.57:TIMP=.57]
       [LOSS= 2 :CN= 75.0]
       [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 187.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 33.81: SMAX=225.43: SK= .010]
 R0025:C00338------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     COMPUTE DUALHYD       1.0 01:B5            2.20     .346 No_date   28:00   53.85  n/a     .000
      Major System   /     1.0 02:B5-MJ          .00     .000 No_date    0:00     .00  n/a     .000
      Minor System   \     1.0 03:B5-MN         2.20     .260 No_date   27:54   53.87  n/a     .000
       {MjSysSto=.3304E+02, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
 R0025:C00339------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:A8             .96     .177 No_date   28:00   60.02 .807     .000
       [XIMP=.71:TIMP=.71]
       [LOSS= 2 :CN= 75.0]
       [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 186.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 33.81: SMAX=225.43: SK= .010]
 R0025:C00340------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:A6-MJ          .00     .000 No_date    0:00     .00  n/a     .000
                     +     1.0 02:A8             .96     .177 No_date   28:00   60.02  n/a     .000
                  SUM=     1.0 01:A8T            .96     .177 No_date   28:00   60.02  n/a     .000
 R0025:C00341------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     COMPUTE DUALHYD       1.0 01:A8T            .96     .177 No_date   28:00   60.02  n/a     .000
      Major System   /     1.0 02:A8-MJ          .00     .000 No_date    0:00     .00  n/a     .000
      Minor System   \     1.0 03:A8-MN          .96     .177 No_date   28:00   60.02  n/a     .000
       {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
 R0025:C00342------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:104-105     131.77   10.846 No_date   28:08   50.09  n/a     .000
                     +     1.0 02:B5-MN         2.20     .260 No_date   27:54   53.87  n/a     .000
                     +     1.0 02:A8-MN          .96     .177 No_date   28:00   60.02  n/a     .000
                     +     1.0 02:TODD_MN3j      .00     .004 No_date   28:00   53.58  n/a     .000
                  SUM=     1.0 01:MH105       134.93   11.175 No_date   28:08   50.23  n/a     .000
 R0025:C00343------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     SAVE HYD              1.0 01:MH105       134.93   11.175 No_date   28:08   50.23  n/a     .000
       fname :MH105.0025
       remark:Total Flows at MH105
 R0025:C00344------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
  *  DIVERT HYD      ->    1.0 01:A8-MJ          .00     .000 No_date    0:00     .00  n/a     .000
            diverted <=    1.0 02:A8-MJ-JR       .00     .000 No_date    0:00     .00  n/a     .000
            diverted <=    1.0 03:A8-MJ-B6       .00     .000 No_date    0:00     .00  n/a     .000
 R0025:C00345------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     DIVERT HYD      ->    1.0 01:MH105       134.93   11.175 No_date   28:08   50.23  n/a     .000
            diverted <=    1.0 02:MH105-JR     33.95    8.167 No_date   28:08   50.23  n/a     .000
            diverted <=    1.0 03:MH105-B6    100.98    3.008 No_date   28:08   50.23  n/a     .000
 R0025:C00346------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:B7            7.19     .975 No_date   28:01   49.75 .669     .000
       [XIMP=.41:TIMP=.54]
       [LOSS= 2 :CN= 75.0]
       [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 211.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 33.81: SMAX=225.43: SK= .010]
 R0025:C00347------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:B4-MJ          .00     .000 No_date    0:00     .00  n/a     .000
                     +     1.0 02:B7            7.19     .975 No_date   28:01   49.75  n/a     .000
                  SUM=     1.0 01:B7-B4MJ       7.19     .975 No_date   28:01   49.75  n/a     .000
 R0025:C00348------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     COMPUTE DUALHYD       1.0 01:B7-B4MJ       7.19     .975 No_date   28:01   49.75  n/a     .000
      Major System   /     1.0 02:B7R-MJ         .00     .000 No_date    0:00     .00  n/a     .000
      Minor System   \     1.0 03:B7R-MN        7.19     .629 No_date   27:53   50.01  n/a     .000
       {MjSysSto=.1702E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
 R0025:C00349------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE PIPE      ->    1.0 02:B7R-MN        7.19     .629 No_date   27:53   50.01  n/a     .000
  *   [RDT= 1.00] out<-    1.0 01:360-106A      7.19     .629 No_date   28:21   50.01  n/a     .000
       [L/S/n=  167./ .100/.013]
       {Vmax= 1.089:Dmax=  .665}
       [Din= 1.05:Dused= 1.05}
 R0025:C00350------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:B6            3.29     .465 No_date   28:00   49.75 .669     .000
       [XIMP=.41:TIMP=.54]
       [LOSS= 2 :CN= 75.0]
       [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 148.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 33.81: SMAX=225.43: SK= .010]
 R0025:C00351------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     COMPUTE DUALHYD       1.0 01:B6            3.29     .465 No_date   28:00   49.75  n/a     .000
      Major System   /     1.0 02:B6-MJ          .00     .000 No_date    0:00     .00  n/a     .000
      Minor System   \     1.0 03:B6-MN         3.29     .064 No_date   27:34   49.75  n/a     .000
       {MjSysSto=.5165E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
 R0025:C00352------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:EX-LAND      32.50    4.063 No_date   28:02   50.08 .673     .000
       [XIMP=.50:TIMP=.50]
       [LOSS= 2 :CN= 74.0]
       [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 465.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 36.67: SMAX=244.49: SK= .010]
 R0025:C00353------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     COMPUTE DUALHYD       1.0 01:EX-LAND      32.50    4.063 No_date   28:02   50.08  n/a     .000
      Major System   /     1.0 02:EX-LAND-MJ     .00     .000 No_date    0:00     .00  n/a     .000
      Minor System   \     1.0 03:EX-LAND-MN   32.50    2.275 No_date   27:52   50.26  n/a     .000
       {MjSysSto=.1224E+04, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
 R0025:C00354------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:B7R-MJ         .00     .000 No_date    0:00     .00  n/a     .000
                     +     1.0 02:EX-LAND-MJ     .00     .000 No_date    0:00     .00  n/a     .000
                     +     1.0 02:B5-MJ          .00     .000 No_date    0:00     .00  n/a     .000
                     +     1.0 02:B6-MJ          .00     .000 No_date    0:00     .00  n/a     .000
                     +     1.0 02:B6-MN         3.29     .064 No_date   27:34   49.75  n/a     .000
                     +     1.0 02:A8-MJ-B6       .00     .000 No_date    0:00     .00  n/a     .000
                  SUM=     1.0 01:B6-B7ExMJ     3.29     .064 No_date   27:34   49.75  n/a     .000
 R0025:C00355------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     COMPUTE DUALHYD       1.0 01:B6-B7ExMJ     3.29     .064 No_date   27:34   49.75  n/a     .000
      Major System   /     1.0 02:B6R-MJ         .00     .000 No_date    0:00     .00  n/a     .000
      Minor System   \     1.0 03:B6R-MN        3.29     .064 No_date   27:34   49.75  n/a     .000
       {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
 R0025:C00356------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE PIPE      ->    1.0 02:MH105-B6    100.98    3.008 No_date   28:08   50.23  n/a     .000
      [RDT= 1.00] out<-    1.0 01:105-106A    100.98    3.018 No_date   28:02   50.23  n/a     .000
       [L/S/n=  208./ .100/.013]
       {Vmax= 1.597:Dmax= 1.249}
       [Din= 1.80:Dused= 1.80}
 R0025:C00357------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:360-106A      7.19     .629 No_date   28:21   50.01  n/a     .000
                     +     1.0 02:105-106A    100.98    3.018 No_date   28:02   50.23  n/a     .000
                     +     1.0 02:B6R-MN        3.29     .064 No_date   27:34   49.75  n/a     .000
                     +     1.0 02:B6R-MJ         .00     .000 No_date    0:00     .00  n/a     .000
                  SUM=     1.0 01:MH106A      111.46    3.702 No_date   28:02   50.20  n/a     .000
 R0025:C00358------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     SAVE HYD              1.0 01:MH106A      111.46    3.702 No_date   28:02   50.20  n/a     .000
       fname :MH106A.0025
       remark:Total Flows at MH106A
 R0025:C00359------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE PIPE      ->    1.0 02:MH106A      111.46    3.702 No_date   28:02   50.20  n/a     .000
  *   [RDT= 1.00] out<-    1.0 01:106A-106    111.46    3.699 No_date   28:16   50.20  n/a     .000
       [L/S/n=  190./ .100/.013]
       {Vmax= 1.635:Dmax= 1.487}
       [Din= 1.80:Dused= 1.81}
 R0025:C00360------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:A9            2.44     .433 No_date   28:00   60.02 .807     .000
       [XIMP=.71:TIMP=.71]
       [LOSS= 2 :CN= 75.0]
       [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 262.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 33.81: SMAX=225.43: SK= .010]
 R0025:C00361------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     COMPUTE DUALHYD       1.0 01:A9            2.44     .433 No_date   28:00   60.02  n/a     .000
      Major System   /     1.0 02:A9-MJ          .00     .000 No_date    0:00     .00  n/a     .000
      Minor System   \     1.0 03:A9-MN         2.44     .433 No_date   28:00   60.02  n/a     .000
 R0025:C00362------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:106A-106    111.46    3.699 No_date   28:16   50.20  n/a     .000
                     +     1.0 02:A9-MN         2.44     .433 No_date   28:00   60.02  n/a     .000
                  SUM=     1.0 01:MH106       113.90    4.090 No_date   28:01   50.41  n/a     .000
 R0025:C00363------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     SAVE HYD              1.0 01:MH106       113.90    4.090 No_date   28:01   50.41  n/a     .000
       fname :MH106.0025
       remark:Total Flows at MH106
 R0025:C00364------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE PIPE      ->    1.0 02:MH106       113.90    4.090 No_date   28:01   50.41  n/a     .000
  *   [RDT= 1.00] out<-    1.0 01:106-107     113.90    4.067 No_date   28:03   50.41  n/a     .000
       [L/S/n=  123./ .100/.013]
       {Vmax= 1.676:Dmax= 1.544}
       [Din= 1.80:Dused= 1.88}
 R0025:C00365------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:A10           4.14     .526 No_date   28:01   46.81 .629     .000
       [XIMP=.35:TIMP=.47]
       [LOSS= 2 :CN= 75.0]
       [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 183.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 33.81: SMAX=225.43: SK= .010]
 R0025:C00366------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     COMPUTE DUALHYD       1.0 01:A10           4.14     .526 No_date   28:01   46.81  n/a     .000
      Major System   /     1.0 02:A10-MJ         .00     .000 No_date    0:00     .00  n/a     .000
      Minor System   \     1.0 03:A10-MN        4.14     .310 No_date   27:52   46.90  n/a     .000
       {MjSysSto=.1196E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
 R0025:C00367------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:A11          10.61    1.511 No_date   28:01   54.09 .727     .000
       [XIMP=.53:TIMP=.62]
       [LOSS= 2 :CN= 75.0]
       [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 379.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 33.81: SMAX=225.43: SK= .010]
 R0025:C00368------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     COMPUTE DUALHYD       1.0 01:A11          10.61    1.511 No_date   28:01   54.09  n/a     .000
      Major System   /     1.0 02:A11-MJ         .00     .000 No_date    0:00     .00  n/a     .000
      Minor System   \     1.0 03:A11-MN       10.61     .993 No_date   27:54   54.21  n/a     .000
       {MjSysSto=.2791E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
 R0025:C00369------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:106-107     113.90    4.067 No_date   28:03   50.41  n/a     .000
                     +     1.0 02:A10-MN        4.14     .310 No_date   27:52   46.90  n/a     .000
                     +     1.0 02:A11-MN       10.61     .993 No_date   27:54   54.21  n/a     .000
                  SUM=     1.0 01:MH107       128.65    5.370 No_date   28:03   50.61  n/a     .000
 R0025:C00370------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     SAVE HYD              1.0 01:MH107       128.65    5.370 No_date   28:03   50.61  n/a     .000
       fname :MH107.0025
       remark:Total Flows at MH107
 R0025:C00371------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE PIPE      ->    1.0 02:MH107       128.65    5.370 No_date   28:03   50.61  n/a     .000
  *   [RDT= 1.00] out<-    1.0 01:107-119     128.65    5.374 No_date   28:04   50.61  n/a     .000
       [L/S/n=  114./ .120/.013]
       {Vmax= 1.922:Dmax= 1.653}
       [Din= 1.80:Dused= 2.01}
 R0025:C00372------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE PIPE      ->    1.0 02:107-119     128.65    5.374 No_date   28:04   50.61  n/a     .000
  *   [RDT= 1.00] out<-    1.0 01:119-108     128.65    5.354 No_date   28:04   50.61  n/a     .000
       [L/S/n=   66./ .120/.013]
       {Vmax= 1.922:Dmax= 1.653}
       [Din= 1.80:Dused= 2.01}
 R0025:C00373------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:A12          12.29    1.704 No_date   28:01   49.75 .669     .000
       [XIMP=.41:TIMP=.54]
       [LOSS= 2 :CN= 75.0]
       [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 183.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 33.81: SMAX=225.43: SK= .010]
 R0025:C00374------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     COMPUTE DUALHYD       1.0 01:A12          12.29    1.704 No_date   28:01   49.75  n/a     .000
      Major System   /     1.0 02:A12-MJ         .00     .000 No_date    0:00     .00  n/a     .000
      Minor System   \     1.0 03:A12-MN       12.29    1.029 No_date   27:52   49.91  n/a     .000
       {MjSysSto=.3558E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
 R0025:C00375------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:A13           2.59     .435 No_date   28:01   60.02 .807     .000
       [XIMP=.71:TIMP=.71]
       [LOSS= 2 :CN= 75.0]
       [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 379.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 33.81: SMAX=225.43: SK= .010]
 R0025:C00376------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     COMPUTE DUALHYD       1.0 01:A13           2.59     .435 No_date   28:01   60.02  n/a     .000
      Major System   /     1.0 02:A13-MJ         .00     .000 No_date    0:00     .00  n/a     .000
      Minor System   \     1.0 03:A13-MN        2.59     .435 No_date   28:01   60.02  n/a     .000
 R0025:C00377------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:Pond-Block    2.94     .375 No_date   28:00   47.01 .632     .000
       [XIMP=.41:TIMP=.41]
       [LOSS= 2 :CN= 75.0]
       [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 183.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 33.81: SMAX=225.43: SK= .010]
 R0025:C00378------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:119-108     128.65    5.354 No_date   28:04   50.61  n/a     .000
                     +     1.0 02:A13-MN        2.59     .435 No_date   28:01   60.02  n/a     .000
                     +     1.0 02:A12-MN       12.29    1.029 No_date   27:52   49.91  n/a     .000
                  SUM=     1.0 01:MH108       143.53    6.791 No_date   28:03   50.72  n/a     .000
 R0025:C00379------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     SAVE HYD              1.0 01:MH108       143.53    6.791 No_date   28:03   50.72  n/a     .000
       fname :MH108.0025
       remark:Total Flows at MH108
 R0025:C00380------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE PIPE      ->    1.0 02:MH108       143.53    6.791 No_date   28:03   50.72  n/a     .000
  *   [RDT= 1.00] out<-    1.0 01:108-116     143.53    6.772 No_date   28:04   50.72  n/a     .000
       [L/S/n=   77./ .130/.013]
       {Vmax= 2.100:Dmax= 1.778}
       [Din= 1.80:Dused= 2.17}
 R0025:C00381------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE PIPE      ->    1.0 02:108-116     143.53    6.772 No_date   28:04   50.72  n/a     .000
  *   [RDT= 1.00] out<-    1.0 01:116-corrig  143.53    6.762 No_date   28:05   50.72  n/a     .000
       [L/S/n=   80./ .130/.013]
       {Vmax= 2.098:Dmax= 1.776}
       [Din= 1.80:Dused= 2.16}
 R0025:C00382------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:116-corrig  143.53    6.762 No_date   28:05   50.72  n/a     .000
                     +     1.0 02:Pond-Block    2.94     .375 No_date   28:00   47.01  n/a     .000
                  SUM=     1.0 01:Corrigan    146.47    7.034 No_date   28:04   50.65  n/a     .000
 R0025:C00383------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     SAVE HYD              1.0 01:Corrigan    146.47    7.034 No_date   28:04   50.65  n/a     .000
       fname :Corrigan.0025
       remark:HYD_COMMENT=["Total Flows at Corrigan Pond]
 R0025:C00384------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE RESERVOIR ->    1.0 02:Corrigan    146.47    7.034 No_date   28:04   50.65  n/a     .000
                 out <=    1.0 01:Co-P        146.47    6.458 No_date   28:16   50.64  n/a     .000
            overflow <=    1.0 03:Co-P-OVF       .00     .000 No_date    0:00     .00  n/a     .000
      {MxStoUsed=.1034E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
 R0025:C00385------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:Co-P-OVF       .00     .000 No_date    0:00     .00  n/a     .000
                     +     1.0 02:Co-P        146.47    6.458 No_date   28:16   50.64  n/a     .000
                     +     1.0 02:N_TO      54838.44  104.039 No_date   38:49   29.21  n/a     .000
                     +     1.0 02:MH105-JR     33.95    8.167 No_date   28:08   50.23  n/a     .000
                     +     1.0 02:A8-MJ-JR       .00     .000 No_date    0:00     .00  n/a     .000
                     +     1.0 02:A9-MJ          .00     .000 No_date    0:00     .00  n/a     .000
                     +     1.0 02:A10-MJ         .00     .000 No_date    0:00     .00  n/a     .000
                     +     1.0 02:A11-MJ         .00     .000 No_date    0:00     .00  n/a     .000
                     +     1.0 02:A12-MJ         .00     .000 No_date    0:00     .00  n/a     .000
                     +     1.0 02:A13-MJ         .00     .000 No_date    0:00     .00  n/a     .000
                  SUM=     1.0 01:corrig    55018.86  104.282 No_date   38:51   29.28  n/a     .000
 R0025:C00386------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     SAVE HYD              1.0 01:corrig    55018.86  104.282 No_date   38:51   29.28  n/a     .000
       fname :corrig.0025
       remark:Total Flows at Corrigan Pond
 #***************************************************************************
 #    Corrigan Pond 1
 #    - Rating curve obtained from Barrhaven South MSS modeling
 #    - Tributary Drainage Area to MSS Pond 1 = 145 ha
 #***************************************************************************
 #
 # Hydrograph from Corrigan Drain routed to Jockvale Road
 # Channel X-Section obtained from RVCA Hydraulic Model - Station 2462
 #
 R0025:C00387------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE CHANNEL   ->    1.0 02:corrig    55018.86  104.282 No_date   38:51   29.28  n/a     .000
      [RDT= 1.00] out<-    1.0 01:N_MI      55018.86  104.271 No_date   38:54   29.28  n/a     .000
       [L/S/n=  580./ .445/.045]
       {Vmax= 1.916:Dmax= 1.792}
 #***************************************************************************
 #    Catchment MILLS
```

```
#    - To SWM Facility north of the Jock
#    - Primarily residental development
#*****************************************************************************
R0025:C00388-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:MILLS        175.99   15.275 No_date   28:07   44.62 .600     .000
      [XIMP=.38:TIMP=.38]
      [LOSS= 2 :CN= 74.0]
      [Pervious    area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious  area: IAimp= 1.57:SLPI=1.00:LGI=1118.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 36.67: SMAX=244.49: SK= .010]
#*****************************************************************************
#    Chapman Mills SWM Pond
#    - Rating curve obtained from CCL hydraulic modeling
#*****************************************************************************
R0025:C00389-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:MILLS        175.99   15.275 No_date   28:07   44.62  n/a     .000
                out <=    1.0 01:MILL_P       162.60    4.050 No_date   28:16   44.62  n/a     .000
           overflow <=    1.0 03:MIL-OV        13.39    8.160 No_date   28:16   44.62  n/a     .000
     {MxStoUsed=.2310E+01  m3, TotOvfVol=.5973E+00  m3, N-Ovf=    2, TotDurOvf=    1.hrs}
R0025:C00390-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N_MI       55018.86  104.271 No_date   38:54   29.28  n/a     .000
                    +     1.0 02:MIL-OV        13.39    8.160 No_date   28:16   44.62  n/a     .000
                    +     1.0 02:MILL_P       162.60    4.050 No_date   28:16   44.62  n/a     .000
                 SUM=     1.0 01:SN_MI      55194.86  104.675 No_date   38:54   29.33  n/a     .000
R0025:C00391-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_MI      55194.86  104.675 No_date   38:54   29.33  n/a     .000
      fname :SN_MI.0025
      remark:Total Flows at Jockvale Road
#
# Hydrograph from Jockvale Road routed to Heart's Desire
# Channel X-Section obtained from RVCA Hydraulic Model - Station 689
#
R0025:C00392-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_MI      55194.86  104.675 No_date   38:54   29.33  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N_DE       55194.86  104.438 No_date   39:12   29.33  n/a     .000
      [L/S/n= 1962./ .223/.045]
      {Vmax= 1.484:Dmax= 2.267}
#*****************************************************************************
#    Catchment DESIRE
#    - To Jock River (north of the Jock)
#    - Rural-estate subdivision (Heart's Desire Community)
#*****************************************************************************
R0025:C00393-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:DESIRE        23.78    2.161 No_date   28:03   40.77 .548     .000
      [XIMP=.25:TIMP=.25]
      [LOSS= 2 :CN= 77.0]
      [Pervious    area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious  area: IAimp= 1.57:SLPI=1.00:LGI= 400.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
#*****************************************************************************
#    Catchment JOCKVA
#    - To Jockvale SWM Facility
#    - Residential development & golf course
#    - JFSA 2021-01-11 update JOCKVA after updating CORRIG as per IBI GROUP, July 2008.
#      JOCKVA area became 225.13 ha instead of 257.63 ha. JOCKVA separated into two areas JOCKVA and EX-LAND 32.5 ha as
#*****************************************************************************
R0025:C00394-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:JOCKVA       225.13   21.797 No_date   28:07   50.08 .673     .000
      [XIMP=.50:TIMP=.50]
      [LOSS= 2 :CN= 74.0]
      [Pervious    area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious  area: IAimp= 1.57:SLPI=1.00:LGI=1311.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 36.67: SMAX=244.49: SK= .010]
R0025:C00395-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:EX-LAND-MN    32.50    2.275 No_date   27:52   50.26  n/a     .000
                    +     1.0 02:JOCKVA       225.13   21.797 No_date   28:07   50.08  n/a     .000
                    +     1.0 02:B2-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:B3-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                 SUM=     1.0 01:JOCKVA-TO    257.63   24.072 No_date   28:07   50.10  n/a     .000
R0025:C00396-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:JOCKVA-TO    257.63   24.072 No_date   28:07   50.10  n/a     .000
      fname :JOCKVA-TO.0025
      remark:Total Flows at KB first pond
#*****************************************************************************
#    Jockvale SWM Facility
#    - Rating curve obtained from Jockvale Servicing Study (CCL 1999)
#*****************************************************************************
R0025:C00397-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:JOCKVA-TO    257.63   24.072 No_date   28:07   50.10  n/a     .000
                out <=    1.0 01:JOCK_P       257.63    9.145 No_date   28:37   50.10  n/a     .000
           overflow <=    1.0 03:JO-OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.5425E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00398-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N_DE       55194.86  104.438 No_date   39:12   29.33  n/a     .000
                    +     1.0 02:DESIRE        23.78    2.161 No_date   28:03   40.77  n/a     .000
                    +     1.0 02:JO-OVF          .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:JOCK_P       257.63    9.145 No_date   28:37   50.10  n/a     .000
                 SUM=     1.0 01:SN_DE      55476.27  105.082 No_date   39:11   29.43  n/a     .000
R0025:C00399-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_DE      55476.27  105.082 No_date   39:11   29.43  n/a     .000
      fname :SN_DE.0025
      remark:Total Flows at Heart's Desire
#
# Hydrograph from Heart's Desire routed to Rideau River
# Channel X-Section obtained from RVCA Hydraulic Model - Station 0
#
R0025:C00400-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_DE      55476.27  105.082 No_date   39:11   29.43  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N1         55476.27  105.073 No_date   39:15   29.43  n/a     .000
      [L/S/n=  563./ .967/.045]
      {Vmax= 1.944:Dmax= 1.136}
#*****************************************************************************
#    Catchment S-2
#    - To Jock River (north and south)
#    - Undeveloped floodplain and river
#*****************************************************************************
R0025:C00401-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:S-2          102.94    3.971 No_date   28:20   30.13 .405     .000
      [CN= 72.0: N= 3.00: Tp=  .40]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
R0025:C00402-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N1         55476.27  105.073 No_date   39:15   29.43  n/a     .000
                    +     1.0 02:S-2          102.94    3.971 No_date   28:20   30.13  n/a     .000
                 SUM=     1.0 01:SN_N1      55579.21  105.274 No_date   39:15   29.43  n/a     .000
R0025:C00403-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_N1      55579.21  105.274 No_date   39:15   29.43  n/a     .000
      fname :SN_N1.0025
      remark:Total Flows at Rideau River
#############################################################################
  ** END OF RUN :   49

*****************************************************************************************

 RUN#:COMMAND#
R0050:C00001-----------------------------------------------------------------------------
     START
      [TZERO =    .00 hrs on        0]
      [METOUT=   2    (1=imperial, 2=metric output)]
      [NSTORM=   1 ]
      [NRUN  = 0050 ]
#*****************************************************************************
#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
#*****************************************************************************
#  Project Name: [Jock River]    Project Number: [1474-16]
#  Date        : 04-03-2021
#  Modeller    : [M.M.]
#  Company     : JFSAinc.
#  License #   :  2549237
#*****************************************************************************
# CALIBRATION OF SUMMER MODEL PARAMETERS
# USING CONTINUOUS SIMULATIONS
# Rainfall data from JFSA raingauge installed at site + other gauges by the City
# Use data collected from May 1st to July 14, 2003
# 2020-11-30 change TMJSTO in COMPUTE DUALHYD (TMJSTO = 0.1 instead of 0.0001)
# 2020-12-01 correct pond curve values
# 2020-12-01 change W_CLAR_BRAZ XIMP to 0.55, SLPI=[0.5](%) (impervious slope), and LGI up to 700m
# 2021-02-19 Change the slope for ROUTE CHANNEL Station 2462 (NHYDout=["N_TO"] ,NHYDin=["SN_TO"]) from 0.033 % (as per S
# 2021-02-19 Change the slope for ROUTE CHANNEL Station 5002 (NHYDout=["N_WC"] ,NHYDin=["SN_CE"]) from 0.01 % (as per St
# -----------------------------------------------------------------------------
R0050:C00002-----------------------------------------------------------------------------
     READ STORM
      Filename = storm.001
      Comment  = Pluie SCS de 24 hres 1:50 ans pour Ottawa CDA
      [SDT=10.00:SDUR=  24.00:PTOT=  81.51]
R0050:C00003-----------------------------------------------------------------------------
     MODIFY STORM
      [RFACT=  1.00:TSHIFT= 960.00 min]
      [SDT=10.00:SDUR=  40.00:PTOT=  81.51]
R0050:C00004-----------------------------------------------------------------------------
     DEFAULT VALUES
      Filename = T:\PROJ\1474-16\Design\20201026-QuantityControlAnalysis\SWMHYMO\SMR-Model\updated3\CitiGate.DEF
      ICASEdv  = 1 (read and print data)
      FileTitle= File comment: [Based onvarious calibration exercises in Onta
                 THE FOLLOWING PARAMETERS ARE USED IN THE DESIGN STANDHYD COM
      Horton's infiltration equation parameters:
      [Fo= 76.20 mm/hr] [Fc=13.20 mm/hr] [DCAY= 4.14 /hr] [F=  .00 mm]
      Parameters for PERVIOUS surfaces in STANDHYD:
      [IAper=   4.67 mm] [LGP=50.00 m] [MNP= .250]
      Parameters for IMPERVIOUS surfaces in STANDHYD:
      [IAimp=   1.57 mm] [CLI= 1.50]   [MNI= .013]
      Parameters used in NASHYD:
      [Ia=   4.67 mm] [N= 3.00]
      Average monthly Pan Evaporation data in    (mm)
   JAN   FEB   MAR   APR   MAY   JUN   JUL   AUG   SEP   OCT   NOV   DEC
   .00   .00   .00   .00   .00   .00   .00   .00   .00   .00   .00   .00
      Average monthly Potential Evapotranspiration in    (mm)
   JAN   FEB   MAR   APR   MAY   JUN   JUL   AUG   SEP   OCT   NOV   DEC
   .00   .00   .00   .00   .00   .00   .00   .00   .00   .00   .00   .00
R0050:C00005-----------------------------------------------------------------------------
     COMPUTE API
      [APIini= 50.00: APIkdy= .8500: APIkdt= .9989]
      {APImax=113.33: APIavg= 67.14: APImin= 44.87}
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.32
R0050:C00006-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:JR_HW       3680.00   18.440 No_date   36:55   30.33 .372     .000
      [CN= 64.0: N= 3.00: Tp= 7.13]
      [IaREC= 4.00: SMIN= 57.05: SMAX=380.32: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.32
R0050:C00007-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_13        971.00    6.937 No_date   32:34   28.27 .347     .000
      [CN= 61.0: N= 3.00: Tp= 3.76]
      [IaREC= 4.00: SMIN= 64.50: SMAX=430.01: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.80
R0050:C00008-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:JR_GWM      3074.00    8.912 No_date   39:59   24.31 .298     .000
      [CN= 55.0: N= 3.00: Tp=11.33]
      [IaREC= 4.00: SMIN= 83.24: SMAX=554.96: SK= .010]
      [InterEventTime=  12.00]
R0050:C00009-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:JR_ASH      1781.00   16.834 No_date   32:39   36.85 .452     .000
      [CN= 72.0: N= 3.00: Tp= 3.91]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
R0050:C00010-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_11        500.00    9.061 No_date   29:21   31.73 .389     .000
      [CN= 66.0: N= 3.00: Tp= 1.24]
      [IaREC= 4.00: SMIN= 52.62: SMAX=350.79: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.80
R0050:C00011-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:NN_CK       1917.00   12.342 No_date   34:26   31.73 .389     .000
      [CN= 66.0: N= 3.00: Tp= 5.29]
      [IaREC= 4.00: SMIN= 52.62: SMAX=350.79: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.52
R0050:C00012-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_10       5666.00   32.402 No_date   37:52   36.85 .452     .000
      [CN= 72.0: N= 3.00: Tp= 8.00]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.75
R0050:C00013-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:KG_CK       8376.00   31.024 No_date   39:59   31.73 .389     .000
      [CN= 66.0: N= 3.00: Tp=11.66]
      [IaREC= 4.00: SMIN= 52.62: SMAX=350.79: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.68
R0050:C00014-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_9        1132.00   14.039 No_date   30:53   35.35 .434     .000
      [CN= 70.0: N= 3.00: Tp= 2.51]
      [IaREC= 4.00: SMIN= 43.07: SMAX=287.10: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.82
R0050:C00015-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:NC_CK       4464.00   15.472 No_date   39:59   28.95 .355     .000
      [CN= 62.0: N= 3.00: Tp=11.32]
      [IaREC= 4.00: SMIN= 61.90: SMAX=412.66: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.80
R0050:C00016-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_8         131.00    2.740 No_date   28:57   29.64 .364     .000
      [CN= 63.0: N= 3.00: Tp=  .90]
      [IaREC= 4.00: SMIN= 59.42: SMAX=396.11: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.65
R0050:C00017-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:HB_DR       3854.00   18.180 No_date   38:32   31.73 .389     .000
      [CN= 66.0: N= 3.00: Tp= 8.42]
      [IaREC= 4.00: SMIN= 52.62: SMAX=350.79: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.82
R0050:C00018-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_7        3197.00   13.937 No_date   36:23   25.61 .314     .000
      [CN= 57.0: N= 3.00: Tp= 6.65]
      [IaREC= 4.00: SMIN= 76.32: SMAX=508.81: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.75
R0050:C00019-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_6         165.00    1.285 No_date   33:02   32.44 .398     .000
      [CN= 67.0: N= 3.00: Tp= 4.18]
      [IaREC= 4.00: SMIN= 50.55: SMAX=336.97: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.67
R0050:C00020-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:VG_DR       1332.00    9.332 No_date   35:12   36.85 .452     .000
      [CN= 72.0: N= 3.00: Tp= 5.95]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
R0050:C00021-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_5         224.00    8.187 No_date   28:45   41.51 .509     .000
      [CN= 77.0: N= 3.00: Tp=  .75]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.20
R0050:C00022-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:FL_CK       4945.00   44.623 No_date   33:18   38.37 .471     .000
      [CN= 74.0: N= 3.00: Tp= 4.45]
      [IaREC= 4.00: SMIN= 36.67: SMAX=244.49: SK= .010]
      [InterEventTime=  12.00]
R0050:C00023-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_5A2        20.00     .943 No_date   28:35   45.60 .560     .000
      [CN= 81.0: N= 3.00: Tp=  .62]
      [IaREC= 4.00: SMIN= 25.21: SMAX=168.09: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.61
R0050:C00024-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_5A1      1412.00    8.794 No_date   37:48   39.93 .490     .000
      [CN= 75.0: N= 3.00: Tp= 8.00]
      [IaREC= 4.00: SMIN= 33.81: SMAX=225.43: SK= .010]
      [InterEventTime=  12.00]
R0050:C00025-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_4         585.00   12.896 No_date   29:55   45.60 .560     .000
      [CN= 81.0: N= 3.00: Tp= 1.75]
      [IaREC= 4.00: SMIN= 25.21: SMAX=168.09: SK= .010]
      [InterEventTime=  12.00]
R0050:C00026-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:LM_CK       1021.00   17.059 No_date   30:46   44.77 .549     .000
      [CN= 80.0: N= 3.00: Tp= 2.46]
      [IaREC= 4.00: SMIN= 26.32: SMAX=175.50: SK= .010]
      [InterEventTime=  12.00]
R0050:C00027-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_2         177.00    6.469 No_date   28:45   41.51 .509     .000
      [CN= 77.0: N= 3.00: Tp=  .75]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0050:C00028-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SM_DR       1122.00   15.544 No_date   31:43   45.60 .560     .000
      [CN= 81.0: N= 3.00: Tp= 3.25]
      [IaREC= 4.00: SMIN= 25.21: SMAX=168.09: SK= .010]
      [InterEventTime=  12.00]
R0050:C00029-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:MO_DR       2737.00   34.946 No_date   31:29   40.72 .500     .000
      [CN= 76.0: N= 3.00: Tp= 3.03]
      [IaREC= 4.00: SMIN= 32.46: SMAX=216.39: SK= .010]
      [InterEventTime=  12.00]
#
# Routing hydrographs
#
# Starting with the addition of Jock River Headwater and Subwatershed 13
#
R0050:C00030-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:JR_HW       3680.00   18.440 No_date   36:55   30.33  n/a     .000
                    +     1.0 02:SW_13        971.00    6.937 No_date   32:34   28.27  n/a     .000
                 SUM=     1.0 01:S_N13       4651.00   23.559 No_date   35:24   29.90  n/a     .000
#
# Sum of hydrographs from Node 13 routed to Node 13A
# (Approximated cross-section - see cross-section 258)
# Use n=0.04 for summer conditions and n=0.025 for spring conditions
#
R0050:C00031-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N13       4651.00   23.559 No_date   35:24   29.90  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N13A        4651.00   19.136 No_date   39:06   29.90  n/a     .000
      [L/S/n= 9074./ .022/.040]
      {Vmax=  .574:Dmax= 3.920}
```

```
#
# Addition of Subwatershed Jock River at Goodwood Marsh to Node 13A
#
R0050:C00032------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:N13A          4651.00   19.136 No_date   39:06   29.90  n/a     .000
                     +     1.0 02:JR_GWM        3074.00    8.912 No_date   39:59   24.31  n/a     .000
                  SUM=     1.0 01:SN13A         7725.00   27.939 No_date   39:54   27.68  n/a     .000
#
# Insertion of a reservoir to simulate the effects of the Goodwood Marsh
#
R0050:C00033------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->     1.0 02:SN13A         7725.00   27.939 No_date   39:54   27.68  n/a     .000
                 out <=    1.0 01:RES_GM        7725.00    3.808 No_date   61:35   27.67  n/a     .000
     {MxStoUsed=.1481E+03  m3}
#
R0050:C00034------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD               1.0 01:RES_GM        7725.00    3.808 No_date   61:35   27.67  n/a     .000
      fname :H_RESGM
      remark:Outflow from Res GM
# Output of Reservoir Goodwood Marsh routed from Node 13A to Node 12
# (Approximated cross-section - see cross-section 258)
# Use n=0.04 for summer conditions and n=0.025 for spring conditions
R0050:C00035------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->     1.0 02:RES_GM        7725.00    3.808 No_date   61:35   27.67  n/a     .000
     [RDT= 1.00] out<-     1.0 01:N12           7725.00    3.804 No_date   64:19   27.68  n/a     .000
      [L/S/n= 5926./ .076/.040]
      {Vmax=  .556:Dmax= 1.541}
#
# Addition of Subwatershed Jock River at Ashton to Node 12
#
R0050:C00036------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:N12           7725.00    3.804 No_date   64:19   27.68  n/a     .000
                     +     1.0 02:JR_ASH        1781.00   16.834 No_date   32:39   36.85  n/a     .000
                  SUM=     1.0 01:S_N12         9506.00   18.867 No_date   32:42   29.39  n/a     .000
R0050:C00037------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD               1.0 01:S_N12         9506.00   18.867 No_date   32:42   29.39  n/a     .000
      fname :H_SN12
      remark:flow at S_N12 near Ashton
#
# Sum of hydrographs from Node 12 routed to Node 11
# (Approximated cross-section - see cross-section 258)
# Use n=0.04 for summer conditions and n=0.025 for spring conditions
#
# Sum of hydrographs from Node 12 routed to Node 11 with Dummy section 248
#
R0050:C00038------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->     1.0 02:S_N12         9506.00   18.867 No_date   32:42   29.39  n/a     .000
     [RDT= 1.00] out<-     1.0 01:Dum11         9506.00   18.687 No_date   32:59   29.39  n/a     .000
      [L/S/n=  972./ .054/.040]
      {Vmax=  .751:Dmax= 3.029}
#
# Addition of Subwatershed 11 and No Name Creek to Node 11
#
R0050:C00039------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:Dum11         9506.00   18.687 No_date   32:59   29.39  n/a     .000
                     +     1.0 02:SW_11          500.00    9.061 No_date   29:21   31.73  n/a     .000
                     +     1.0 02:NN_CK         1917.00   12.342 No_date   34:26   31.73  n/a     .000
                  SUM=     1.0 01:S_N11        11923.00   32.851 No_date   33:00   29.87  n/a     .000
#
# Sum of hydrographs from Node 11 routed to Node 10
# Section 1
#
R0050:C00040------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->     1.0 02:S_N11        11923.00   32.851 No_date   33:00   29.87  n/a     .000
     [RDT= 1.00] out<-     1.0 01:N10          11923.00   20.490 No_date   40:02   29.87  n/a     .000
      [L/S/n=14028./ .157/.040]
      {Vmax=  .474:Dmax= 1.423}
#
# Addition of Subwatershed 10 to Node 10
#
R0050:C00041------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:N10          11923.00   20.490 No_date   40:02   29.87  n/a     .000
                     +     1.0 02:SW_10         5666.00   32.402 No_date   37:52   36.85  n/a     .000
                  SUM=     1.0 01:S_N10        17589.00   52.600 No_date   38:19   32.12  n/a     .000
R0050:C00042------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD               1.0 01:S_N10        17589.00   52.600 No_date   38:19   32.12  n/a     .000
      fname :H_SN10
      remark:flow at S_N10: N10 + SW_10
# Addition of Kings Creek to S_N10
#
R0050:C00043------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:S_N10        17589.00   52.600 No_date   38:19   32.12  n/a     .000
                     +     1.0 02:KG_CK         8376.00   31.024 No_date   39:59   31.73  n/a     .000
                  SUM=     1.0 01:S_N10A       25965.00   82.746 No_date   39:45   31.99  n/a     .000
#
# Sum of hydrographs from Node 10 routed to Node 9
# Section 2
#
R0050:C00044------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->     1.0 02:S_N10A       25965.00   82.746 No_date   39:45   31.99  n/a     .000
     [RDT= 1.00] out<-     1.0 01:N9           25965.00   80.980 No_date   39:59   31.99  n/a     .000
      [L/S/n= 3982./ .075/.040]
      {Vmax=  .744:Dmax= 2.015}
#
# Addition of Subwatershed 9 and Nichols Creek to Node 9
#
R0050:C00045------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:N9           25965.00   80.980 No_date   39:59   31.99  n/a     .000
                     +     1.0 02:SW_9          1132.00   14.039 No_date   30:53   35.35  n/a     .000
                     +     1.0 02:NC_CK         4464.00   15.472 No_date   39:59   28.95  n/a     .000
                  SUM=     1.0 01:S_N9         31561.00   99.424 No_date   39:59   31.68  n/a     .000
#
# Sum of hydrographs from Node 9 routed to Node 8
# Section 3
#
R0050:C00046------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->     1.0 02:S_N9         31561.00   99.424 No_date   39:59   31.68  n/a     .000
     [RDT= 1.00] out<-     1.0 01:N8           31561.00   93.665 No_date   39:59   31.68  n/a     .000
      [L/S/n= 2269./ .088/.045]
      {Vmax=  .367:Dmax= 1.834}
#
# Addition of Subwatershed 8 and Hobb's Drain to Node 8
#
R0050:C00047------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:N8           31561.00   93.665 No_date   39:59   31.68  n/a     .000
                     +     1.0 02:SW_8           131.00    2.740 No_date   28:57   29.64  n/a     .000
                     +     1.0 02:HB_DR         3854.00   18.180 No_date   38:32   31.73  n/a     .000
                  SUM=     1.0 01:S_N8         35546.00  111.843 No_date   39:59   31.68  n/a     .000
#
# Sum of hydrographs from Node 8 routed to Node 7
# Section 4
#
R0050:C00048------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->     1.0 02:S_N8         35546.00  111.843 No_date   39:59   31.68  n/a     .000
     [RDT= 1.00] out<-     1.0 01:N7           35546.00   95.475 No_date   44:55   31.68  n/a     .000
      [L/S/n= 3750./ .053/.070]
      {Vmax=  .231:Dmax= 2.290}
#
# Addition of Subwatershed 7 to Node 7
#
R0050:C00049------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:N7           35546.00   95.475 No_date   44:55   31.68  n/a     .000
                     +     1.0 02:SW_7          3197.00   13.937 No_date   36:23   25.61  n/a     .000
                  SUM=     1.0 01:S_N7         38743.00  102.892 No_date   43:46   31.18  n/a     .000
R0050:C00050------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD               1.0 01:S_N7         38743.00  102.892 No_date   43:46   31.18  n/a     .000
      fname :H_SN7
      remark:flow at S_N7: N7 + SW_7
# Insertion of a reservoir to simulate the effects of the Richmond Fen.
# Storage area and volumes were estimated from available topo maps.
# Release rate from fen was assumed to be controlled by the downstream
# river cross-section for summer conditions.  It is was assumed that for up to
# 0.75 m of water, the main channel of the river provided the storage.  Above
# this depth, the wetland starts to signigicantly store water.
#
R0050:C00051------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->     1.0 02:S_N7         38743.00  102.892 No_date   43:46   31.18  n/a     .000
                 out <=    1.0 01:RES_RF       38743.00   52.029 No_date   59:07   31.18  n/a     .000
     {MxStoUsed=.4394E+03  m3}
R0050:C00052------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD               1.0 01:RES_RF       38743.00   52.029 No_date   59:07   31.18  n/a     .000
      fname :H_ResRF
      remark:outflow of Richmond Fen
#
# Sum of hydrographs from Node 7 routed to Node 6
# Section 5
#
R0050:C00053------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->     1.0 02:RES_RF       38743.00   52.029 No_date   59:07   31.18  n/a     .000
     [RDT= 1.00] out<-     1.0 01:N6           38743.00   51.784 No_date   60:27   31.18  n/a     .000
      [L/S/n= 3056./ .082/.025]
      {Vmax=  .538:Dmax= 1.253}
#
# Addition of Subwatershed 6 and Van Gaal Drain to Node 6
#
R0050:C00054------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:N6           38743.00   51.784 No_date   60:27   31.18  n/a     .000
                     +     1.0 02:SW_6           165.00    1.285 No_date   33:02   32.44  n/a     .000
                     +     1.0 02:VG_DR         1332.00    9.332 No_date   35:12   36.85  n/a     .000
                  SUM=     1.0 01:S_N6         40240.01   51.810 No_date   60:20   31.37  n/a     .000
#
# Sum of hydrographs from Node 6 routed to Node 5
# Section 6
#
R0050:C00055------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->     1.0 02:S_N6         40240.01   51.810 No_date   60:20   31.37  n/a     .000
     [RDT= 1.00] out<-     1.0 01:N5           40240.01   51.693 No_date   61:06   31.37  n/a     .000
      [L/S/n= 1852./ .054/.035]
      {Vmax=  .469:Dmax= 1.351}
#
# Addition of Subwatershed 5 and Flowing Creek to Node 5
#
R0050:C00056------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:N5           40240.01   51.693 No_date   61:06   31.37  n/a     .000
                     +     1.0 02:SW_5           224.00    8.187 No_date   28:45   41.51  n/a     .000
                     +     1.0 02:FL_CK         4945.00   44.623 No_date   33:18   38.37  n/a     .000
                  SUM=     1.0 01:S_N5         45409.01   71.514 No_date   34:20   32.18  n/a     .000
#
# Sum of hydrographs from Node 5 routed to Node 5A
# Section 7
#
R0050:C00057------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->     1.0 02:S_N5         45409.01   71.514 No_date   34:20   32.18  n/a     .000
     [RDT= 1.00] out<-     1.0 01:N5A          45409.01   71.311 No_date   34:15   32.18  n/a     .000
      [L/S/n=  556./ .090/.040]
      {Vmax=  .530:Dmax= 1.290}
#
# Addition of Subwatershed 5A1 and Subwatershed 5A2 to Node 5A
#
R0050:C00058------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:N5A          45409.01   71.311 No_date   34:15   32.18  n/a     .000
                     +     1.0 02:SW_5A2          20.00     .943 No_date   28:35   45.60  n/a     .000
                     +     1.0 02:SW_5A1        1412.00    8.794 No_date   37:48   39.93  n/a     .000
                  SUM=     1.0 01:S_N5A        46841.01   79.247 No_date   34:46   32.42  n/a     .000
#
# Sum of hydrographs from Node 5A routed to Node 4
# Section 8
#
R0050:C00059------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->     1.0 02:S_N5A        46841.01   79.247 No_date   34:46   32.42  n/a     .000
     [RDT= 1.00] out<-     1.0 01:N4           46841.01   75.833 No_date   36:02   32.42  n/a     .000
      [L/S/n= 4630./ .043/.035]
      {Vmax=  .874:Dmax= 3.702}
#
# Addition of Subwatershed 4 and Leamy Creek to Node 4
#
R0050:C00060------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:N4           46841.01   75.833 No_date   36:02   32.42  n/a     .000
                     +     1.0 02:SW_4           585.00   12.896 No_date   29:55   45.60  n/a     .000
                     +     1.0 02:LM_CK         1021.00   17.059 No_date   30:46   44.77  n/a     .000
                  SUM=     1.0 01:S_N4         48447.00   84.908 No_date   35:20   32.84  n/a     .000
R0050:C00061------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD               1.0 01:S_N4         48447.00   84.908 No_date   35:20   32.84  n/a     .000
      fname :S_N4.0050
      remark:flow at S_N4
#
# Sum of hydrographs from Node 4 routed to Node 2
# Section 9
#
R0050:C00062------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->     1.0 02:S_N4         48447.00   84.908 No_date   35:20   32.84  n/a     .000
     [RDT= 1.00] out<-     1.0 01:N2           48447.00   84.582 No_date   35:30   32.84  n/a     .000
      [L/S/n= 1667./ .060/.040]
      {Vmax=  .909:Dmax= 3.749}
#
# Addition of Subwatershed 2 with Monohan Drain and Smith Drain to Node 2
#
R0050:C00063------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:N2           48447.00   84.582 No_date   35:30   32.84  n/a     .000
                     +     1.0 02:SW_2           177.00    6.469 No_date   28:45   41.51  n/a     .000
                     +     1.0 02:SM_DR         1122.00   15.544 No_date   31:43   45.60  n/a     .000
                     +     1.0 02:MO_DR         2737.00   34.946 No_date   31:29   40.72  n/a     .000
                  SUM=     1.0 01:S_N2         52483.00  124.249 No_date   32:52   33.56  n/a     .000
R0050:C00064------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD               1.0 01:S_N2         52483.00  124.249 No_date   32:52   33.56  n/a     .000
      fname :H_SN2
      remark:flow at S_N2 Jock River Gauge at Moodie Dr.
#
# Sum of hydrographs from Node 2 routed to Node 1
# Section 10
#
#****************************************************************************
#
# Hydrograph from Node 2 routed to Node 416
# Channel X-Section obtained from RVCA Hydraulic Model - Station 9025
#
R0050:C00065------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->     1.0 02:S_N2         52483.00  124.249 No_date   32:52   33.56  n/a     .000
     [RDT= 1.00] out<-     1.0 01:N_416        52483.00  120.589 No_date   33:57   33.56  n/a     .000
      [L/S/n= 2327./ .050/.055]
      {Vmax=  .781:Dmax= 3.561}
#****************************************************************************
#    Catchment SW-1a
#    - Portion of RVCA catchment SW_1 outside of Reach 1 subwatershed
#    - Undeveloped agricultural land
#****************************************************************************
R0050:C00066------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD      1.0 01:SW_1a          536.42    6.175 No_date   31:15   35.39 .434     .000
      [CN= 72.0: N= 3.00: Tp= 2.79]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
R0050:C00067------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-Okeefe     44.93    7.341 No_date   28:03   63.95 .785     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .75:LGI= 547.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0050:C00068------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:N_416        52483.00  120.589 No_date   33:57   33.56  n/a     .000
                     +     1.0 02:SW_1a          536.42    6.175 No_date   31:15   35.39  n/a     .000
                     +     1.0 02:S-1-Okeefe      44.93    7.341 No_date   28:03   63.95  n/a     .000
                  SUM=     1.0 01:SN_416       53064.36  125.441 No_date   33:19   33.60  n/a     .000
R0050:C00069------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD               1.0 01:SN_416       53064.36  125.441 No_date   33:19   33.60  n/a     .000
      fname :SN_416.0050
      remark:Total Flows at Highway 416
#
# Hydrograph from Node 416 routed to Node at Okeefe drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 7245
#
R0050:C00070------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->     1.0 02:SN_416       53064.36  125.441 No_date   33:19   33.60  n/a     .000
     [RDT= 1.00] out<-     1.0 01:N_OK         53064.36  125.350 No_date   33:43   33.60  n/a     .000
      [L/S/n=  497./ .302/.055]
      {Vmax= 1.649:Dmax= 3.038}
#****************************************************************************
#    Catchment OKEEFE
#    - To O'Keefe drain (north of the Jock)
#    - Developed with assumed 43% imp.
#    - 2020-12-01 add Okeefe model (Area 513.02 HA) instead of current Okeefe (Area 513.02 HA)
#    - 2020-11-20 Okeefe detailed model was added as per the NOVATECH SWMHYMO model (Citi-Gate 2014).
#****************************************************************************
R0050:C00071------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD      1.0 01:O-1             63.72    1.147 No_date   28:58   26.31 .323     .000
      [CN= 61.0: N= 3.00: Tp=  .90]
      [IaREC= 4.00: SMIN= 64.50: SMAX=430.01: SK= .010]
      [InterEventTime=  12.00]
R0050:C00072------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->     1.0 02:O-1             63.72    1.147 No_date   28:58   26.31  n/a     .000
     [RDT= 1.00] out<-     1.0 01:O-1R            63.72    1.084 No_date   29:14   26.31  n/a     .000
      [L/S/n=  960./ .630/.043]
      {Vmax=  .880:Dmax=  .445}
R0050:C00073------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD      1.0 01:O-2             28.61     .404 No_date   29:13   24.30 .298     .000
      [CN= 57.0: N= 3.00: Tp= 1.10]
      [IaREC= 4.00: SMIN= 76.32: SMAX=508.81: SK= .010]
      [InterEventTime=  12.00]
R0050:C00074------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD      1.0 01:O-4             46.94     .531 No_date   29:00   18.55 .228     .000
      [CN= 49.0: N= 3.00: Tp=  .90]
      [IaREC= 4.00: SMIN=104.59: SMAX=697.25: SK= .010]
      [InterEventTime=  12.00]
R0050:C00075------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:O-1R            63.72    1.084 No_date   29:14   26.31  n/a     .000
                     +     1.0 02:O-2             28.61     .404 No_date   29:13   24.30  n/a     .000
                     +     1.0 02:O-4             46.94     .531 No_date   29:00   18.55  n/a     .000
                  SUM=     1.0 01:OKF-N          139.27    2.005 No_date   29:11   23.28  n/a     .000
R0050:C00076------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->     1.0 02:OKF-N          139.27    2.005 No_date   29:11   23.28  n/a     .000
     [RDT= 1.00] out<-     1.0 01:OKF-NR         139.27    2.004 No_date   29:13   23.28  n/a     .000
      [L/S/n=  210./ .810/.043]
      {Vmax= 1.081:Dmax=  .751}
R0050:C00077------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD      1.0 01:O-6             16.46     .179 No_date   28:45   15.94 .196     .000
      [CN= 43.0: N= 3.00: Tp=  .70]
      [IaREC= 4.00: SMIN=134.47: SMAX=896.47: SK= .010]
      [InterEventTime=  12.00]
R0050:C00078------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:O-3             39.67    1.212 No_date   28:22   28.54 .350     .000
      [XIMP=.15:TIMP=.30]
      [LOSS= 2 :CN= 50.0]
      [Pervious     area: IAper= 4.67:SLPP= .32:LGP= 440.:MNP=.035:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .32:LGI=1880.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 99.77: SMAX=665.12: SK= .010]
R0050:C00079------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:O-5             60.63    3.085 No_date   28:10   32.89 .403     .000
      [XIMP=.13:TIMP=.26]
      [LOSS= 2 :CN= 61.0]
      [Pervious     area: IAper= 4.67:SLPP=1.38:LGP= 550.:MNP=.035:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.38:LGI=1450.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 64.50: SMAX=430.01: SK= .010]
R0050:C00080------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:OKF-NR         139.27    2.004 No_date   29:13   23.28  n/a     .000
                     +     1.0 02:O-3             39.67    1.212 No_date   28:22   28.54  n/a     .000
                     +     1.0 02:O-5             60.63    3.085 No_date   28:10   32.89  n/a     .000
                     +     1.0 02:O-6             16.46     .179 No_date   28:45   15.94  n/a     .000
                  SUM=     1.0 01:PT1            256.03    4.968 No_date   28:20   25.90  n/a     .000
R0050:C00081------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD      1.0 01:O-7              5.28     .096 No_date   28:37   21.46 .263     .000
      [CN= 54.0: N= 3.00: Tp=  .60]
      [IaREC= 4.00: SMIN= 87.01: SMAX=580.07: SK= .010]
      [InterEventTime=  12.00]
R0050:C00082------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:PT1            256.03    4.968 No_date   28:20   25.90  n/a     .000
                     +     1.0 02:O-7              5.28     .096 No_date   28:37   21.46  n/a     .000
                  SUM=     1.0 01:FF             261.31    5.051 No_date   28:20   25.81  n/a     .000
R0050:C00083------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->     1.0 02:FF             261.31    5.051 No_date   28:20   25.81  n/a     .000
     [RDT= 1.00] out<-     1.0 01:DRAIN1         261.31    4.883 No_date   28:25   25.81  n/a     .000
      [L/S/n=  302./1.000/.043]
```

```
      {Vmax=  .822:Dmax=  .759}
R0050:C00084-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:D1               1.17      .094 No_date   28:12   43.70 .536      .000
      [CN= 84.0: N= 3.00: Tp=  .28]
      [IaREC= 4.00: SMIN= 21.09: SMAX=140.62: SK= .010]
      [InterEventTime=  12.00]
R0050:C00085-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A1               2.50      .517 No_date   28:01   64.42 .790      .000
      [XIMP=.68:TIMP=.85]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 224.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00086-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:A1               2.50      .517 No_date   28:01   64.42  n/a      .000
                out <=    1.0 01:A1-STR           2.50      .146 No_date   28:19   64.42  n/a      .000
           overflow <=    1.0 03:A1-OVF            .00      .000 No_date    0:00     .00  n/a      .000
     {MxStoUsed=.7243E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00087-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:ST-2              .59      .103 No_date   28:00   50.67 .622      .000
      [XIMP=.46:TIMP=.57]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 109.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00088-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:ST-2              .59      .103 No_date   28:00   50.67  n/a      .000
                out <=    1.0 01:ST2STR            .59      .052 No_date   28:11   50.67  n/a      .000
           overflow <=    1.0 03:ST2OVF            .00      .000 No_date    0:00     .00  n/a      .000
     {MxStoUsed=.3952E-02  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00089-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:O-8             60.55     1.383 No_date   29:04   33.66 .413      .000
      [CN= 69.0: N= 3.00: Tp= 1.00]
      [IaREC= 4.00: SMIN= 44.82: SMAX=298.82: SK= .010]
      [InterEventTime=  12.00]
R0050:C00090-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:O-8             60.55     1.383 No_date   29:04   33.66  n/a      .000
     [RDT= 1.00] out<-    1.0 01:O8PIPE          60.55     1.376 No_date   29:07   33.66  n/a      .000
      [L/S/n=  335./ .100/.013]
      {Vmax= 1.244:Dmax=  .617}
      {HGTH= 1.20:WDTH= 1.80}
R0050:C00091-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:DRAIN1         261.31     4.883 No_date   28:25   25.81  n/a      .000
                    +     1.0 02:D1               1.17      .094 No_date   28:12   43.70  n/a      .000
                    +     1.0 02:A1-STR           2.50      .146 No_date   28:19   64.42  n/a      .000
                    +     1.0 02:A1-OVF            .00      .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:ST2STR            .59      .052 No_date   28:11   50.67  n/a      .000
                    +     1.0 02:ST2OVF            .00      .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:O8PIPE          60.55     1.376 No_date   29:07   33.66  n/a      .000
                 SUM=     1.0 01:ST2-IN         326.12     6.061 No_date   28:35   27.67  n/a      .000
R0050:C00092-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A7               3.51      .704 No_date   28:01   64.42 .790      .000
      [XIMP=.68:TIMP=.85]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 265.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00093-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:A7               3.51      .704 No_date   28:01   64.42  n/a      .000
                out <=    1.0 01:A7-STR           3.51      .199 No_date   28:21   64.42  n/a      .000
           overflow <=    1.0 03:A7-OVF            .00      .000 No_date    0:00     .00  n/a      .000
     {MxStoUsed=.1019E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00094-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:ST-3              .71      .123 No_date   28:00   50.67 .622      .000
      [XIMP=.46:TIMP=.57]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 119.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00095-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:ST-3              .71      .123 No_date   28:00   50.67  n/a      .000
                out <=    1.0 01:ST3STR            .71      .063 No_date   28:11   50.67  n/a      .000
           overflow <=    1.0 03:ST3OVF            .00      .000 No_date    0:00     .00  n/a      .000
     {MxStoUsed=.4527E-02  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00096-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:ST2-IN         326.12     6.061 No_date   28:35   27.67  n/a      .000
                    +     1.0 02:A7-STR           3.51      .199 No_date   28:21   64.42  n/a      .000
                    +     1.0 02:A7-OVF            .00      .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:ST3STR            .71      .063 No_date   28:11   50.67  n/a      .000
                    +     1.0 02:ST3OVF            .00      .000 No_date    0:00     .00  n/a      .000
                 SUM=     1.0 01:PT2ST3         330.34     6.299 No_date   28:33   28.11  n/a      .000
R0050:C00097-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:PT2ST3         330.34     6.299 No_date   28:33   28.11  n/a      .000
     [RDT= 1.00] out<-    1.0 01:DRAIN2         330.34     5.789 No_date   28:58   28.11  n/a      .000
      [L/S/n=  592./ .230/.043]
      {Vmax=  .593:Dmax= 1.152}
R0050:C00098-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:D2               2.28      .074 No_date   29:02   43.70 .536      .000
      [CN= 84.0: N= 3.00: Tp=  .99]
      [IaREC= 4.00: SMIN= 21.09: SMAX=140.62: SK= .010]
      [InterEventTime=  12.00]
R0050:C00099-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A17             12.04     2.163 No_date   28:03   64.42 .790      .000
      [XIMP=.68:TIMP=.85]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 491.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00100-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:A17             12.04     2.163 No_date   28:03   64.42  n/a      .000
                out <=    1.0 01:A17STR          12.04      .654 No_date   28:27   64.42  n/a      .000
           overflow <=    1.0 03:A17OVF            .00      .000 No_date    0:00     .00  n/a      .000
     {MxStoUsed=.3445E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00101-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:ST-4              .35      .063 No_date   28:00   50.67 .622      .000
      [XIMP=.46:TIMP=.57]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=  84.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00102-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:ST-4              .35      .063 No_date   28:00   50.67  n/a      .000
                out <=    1.0 01:ST4STR            .35      .031 No_date   28:10   50.67  n/a      .000
           overflow <=    1.0 03:ST4OVF            .00      .000 No_date    0:00     .00  n/a      .000
     {MxStoUsed=.2719E-02  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00103-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A18              5.30     1.036 No_date   28:01   64.42 .790      .000
      [XIMP=.68:TIMP=.85]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 326.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00104-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:A18              5.30     1.036 No_date   28:01   64.42  n/a      .000
                out <=    1.0 01:A18STR           5.30      .300 No_date   28:22   64.42  n/a      .000
           overflow <=    1.0 03:A18OVF            .00      .000 No_date    0:00     .00  n/a      .000
     {MxStoUsed=.1532E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00105-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:DRAIN2         330.34     5.789 No_date   28:58   28.11  n/a      .000
                    +     1.0 02:D2               2.28      .074 No_date   29:02   43.70  n/a      .000
                    +     1.0 02:A17STR          12.04      .654 No_date   28:27   64.42  n/a      .000
                    +     1.0 02:A17OVF            .00      .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:ST4STR            .35      .031 No_date   28:10   50.67  n/a      .000
                    +     1.0 02:ST4OVF            .00      .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:A18STR           5.30      .300 No_date   28:22   64.42  n/a      .000
                    +     1.0 02:A18OVF            .00      .000 No_date    0:00     .00  n/a      .000
                 SUM=     1.0 01:PT3ST4         350.31     6.632 No_date   28:55   30.03  n/a      .000
R0050:C00106-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:PT3ST4         350.31     6.632 No_date   28:55   30.03  n/a      .000
     [RDT= 1.00] out<-    1.0 01:DRAIN3         350.31     6.350 No_date   29:11   30.03  n/a      .000
      [L/S/n=  525./ .230/.043]
      {Vmax=  .613:Dmax= 1.197}
R0050:C00107-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:D3               2.51      .113 No_date   28:43   47.27 .580      .000
      [CN= 86.0: N= 3.00: Tp=  .73]
      [IaREC= 4.00: SMIN= 17.43: SMAX=116.21: SK= .010]
      [InterEventTime=  12.00]
R0050:C00108-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:C1               3.41      .690 No_date   28:01   64.42 .790      .000
      [XIMP=.68:TIMP=.85]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 261.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00109-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:C1               3.41      .690 No_date   28:01   64.42  n/a      .000
                out <=    1.0 01:C1-STR           3.41      .194 No_date   28:20   64.42  n/a      .000
           overflow <=    1.0 03:C1-OVF            .00      .000 No_date    0:00     .00  n/a      .000
     {MxStoUsed=.9900E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00110-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:ST-5              .45      .079 No_date   28:00   50.67 .622      .000
      [XIMP=.46:TIMP=.57]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=  95.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00111-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:ST-5              .45      .079 No_date   28:00   50.67  n/a      .000
                out <=    1.0 01:ST5STR            .45      .040 No_date   28:10   50.67  n/a      .000
           overflow <=    1.0 03:ST5OVF            .00      .000 No_date    0:00     .00  n/a      .000
     {MxStoUsed=.3164E-02  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00112-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:DRAIN3         350.31     6.350 No_date   29:11   30.03  n/a      .000
                    +     1.0 02:D3               2.51      .113 No_date   28:43   47.27  n/a      .000
                    +     1.0 02:C1-STR           3.41      .194 No_date   28:20   64.42  n/a      .000
                    +     1.0 02:C1-OVF            .00      .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:ST5STR            .45      .040 No_date   28:10   50.67  n/a      .000
                    +     1.0 02:ST5OVF            .00      .000 No_date    0:00     .00  n/a      .000
                 SUM=     1.0 01:ST5-E          356.68     6.575 No_date   29:09   30.51  n/a      .000
R0050:C00113-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:STRAND           7.59     1.038 No_date   28:09   62.95 .772      .000
      [XIMP=.64:TIMP=.85]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1230.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00114-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:STRAND           7.59     1.038 No_date   28:09   62.95  n/a      .000
                out <=    1.0 01:S-POND           7.59      .137 No_date   29:13   62.95  n/a      .000
           overflow <=    1.0 03:S-OVF             .00      .000 No_date    0:00     .00  n/a      .000
     {MxStoUsed=.3159E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00115-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:ST5-E          356.68     6.575 No_date   29:09   30.51  n/a      .000
                    +     1.0 02:S-POND           7.59      .137 No_date   29:13   62.95  n/a      .000
                    +     1.0 02:S-OVF             .00      .000 No_date    0:00     .00  n/a      .000
                 SUM=     1.0 01:SSAOUT         364.27     6.711 No_date   29:09   31.19  n/a      .000
R0050:C00116-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SSAOUT         364.27     6.711 No_date   29:09   31.19  n/a      .000
      fname :SSAOUT.0050
      remark:SSAOUT
R0050:C00117-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:Area-A          66.75     8.917 No_date   28:08   61.83 .759      .000
      [XIMP=.64:TIMP=.80]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1155.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00118-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:Area-A          66.75     8.917 No_date   28:08   61.83  n/a      .000
      fname :Area-A.0050
      remark:SMWF-A Inflow
R0050:C00119-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:Area-A          66.75     8.917 No_date   28:08   61.83  n/a      .000
                out <=    1.0 01:SWMF-A          66.75     1.070 No_date   29:16   61.83  n/a      .000
           overflow <=    1.0 03:SWMAOV            .00      .000 No_date    0:00     .00  n/a      .000
     {MxStoUsed=.2845E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00120-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SWMF-A          66.75     1.070 No_date   29:16   61.83  n/a      .000
      fname :SWMF-A.0050
      remark:SMWF-A Outflow
R0050:C00121-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:SSAOUT         364.27     6.711 No_date   29:09   31.19  n/a      .000
                    +     1.0 02:SWMF-A          66.75     1.070 No_date   29:16   61.83  n/a      .000
                    +     1.0 02:SWMAOV            .00      .000 No_date    0:00     .00  n/a      .000
                 SUM=     1.0 01:PT4ST5         431.02     7.776 No_date   29:10   35.93  n/a      .000
R0050:C00122-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:C6               1.87      .395 No_date   28:01   64.42 .790      .000
      [XIMP=.68:TIMP=.85]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 193.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00123-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:C6               1.87      .395 No_date   28:01   64.42  n/a      .000
                out <=    1.0 01:C6-STR           1.87      .110 No_date   28:18   64.42  n/a      .000
           overflow <=    1.0 03:C6-OVF            .00      .000 No_date    0:00     .00  n/a      .000
     {MxStoUsed=.5452E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00124-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:C7               1.62      .347 No_date   28:00   64.42 .790      .000
      [XIMP=.68:TIMP=.85]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 180.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00125-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:C7               1.62      .347 No_date   28:00   64.42  n/a      .000
                out <=    1.0 01:C7-STR           1.62      .096 No_date   28:17   64.42  n/a      .000
           overflow <=    1.0 03:C7-OVF            .00      .000 No_date    0:00     .00  n/a      .000
     {MxStoUsed=.4698E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00126-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:ST-6              .41      .073 No_date   28:00   50.67 .622      .000
      [XIMP=.46:TIMP=.57]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=  91.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00127-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:ST-6              .41      .073 No_date   28:00   50.67  n/a      .000
                out <=    1.0 01:ST6STR            .41      .036 No_date   28:10   50.67  n/a      .000
           overflow <=    1.0 03:ST6OVF            .00      .000 No_date    0:00     .00  n/a      .000
     {MxStoUsed=.3103E-02  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00128-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:PT4ST5         431.02     7.776 No_date   29:10   35.93  n/a      .000
                    +     1.0 02:C6-STR           1.87      .110 No_date   28:18   64.42  n/a      .000
                    +     1.0 02:C6-OVF            .00      .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:C7-STR           1.62      .096 No_date   28:17   64.42  n/a      .000
                    +     1.0 02:C7-OVF            .00      .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:ST6STR            .41      .036 No_date   28:10   50.67  n/a      .000
                    +     1.0 02:ST6OVF            .00      .000 No_date    0:00     .00  n/a      .000
                 SUM=     1.0 01:PT5ST6         434.92     7.904 No_date   29:09   36.17  n/a      .000
R0050:C00129-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:PT5ST6         434.92     7.904 No_date   29:09   36.17  n/a      .000
     [RDT= 1.00] out<-    1.0 01:DRAIN4         434.92     7.615 No_date   29:20   36.17  n/a      .000
      [L/S/n=  324./ .100/.043]
      {Vmax=  .490:Dmax= 1.531}
R0050:C00130-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:D4               1.73      .097 No_date   28:34   50.14 .615      .000
      [CN= 88.0: N= 3.00: Tp=  .60]
      [IaREC= 4.00: SMIN= 14.94: SMAX= 99.61: SK= .010]
      [InterEventTime=  12.00]
R0050:C00131-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:Area-B          24.04     4.418 No_date   28:02   60.51 .742      .000
      [XIMP=.62:TIMP=.77]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=1.40:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.40:LGI= 693.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00132-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:Area-B          24.04     4.418 No_date   28:02   60.51  n/a      .000
                out <=    1.0 01:SWMF-B          24.04      .566 No_date   28:42   60.51  n/a      .000
           overflow <=    1.0 03:SWMBOVF           .00      .000 No_date    0:00     .00  n/a      .000
     {MxStoUsed=.8944E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00133-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:DRAIN4         434.92     7.615 No_date   29:20   36.17  n/a      .000
                    +     1.0 02:D4               1.73      .097 No_date   28:34   50.14  n/a      .000
                    +     1.0 02:SWMF-B          24.04      .566 No_date   28:42   60.51  n/a      .000
                    +     1.0 02:SWMBOVF           .00      .000 No_date    0:00     .00  n/a      .000
                 SUM=     1.0 01:D4-EX          460.69     8.190 No_date   29:19   37.49  n/a      .000
R0050:C00134-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:D4-EX          460.69     8.190 No_date   29:19   37.49  n/a      .000
     [RDT= 1.00] out<-    1.0 01:DRAIN5         460.69     8.038 No_date   29:27   37.49  n/a      .000
      [L/S/n=  413./ .160/.033]
      {Vmax=  .675:Dmax= 1.051}
R0050:C00135-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:D5               1.90      .089 No_date   28:40   47.27 .580      .000
      [CN= 86.0: N= 3.00: Tp=  .69]
      [IaREC= 4.00: SMIN= 17.43: SMAX=116.21: SK= .010]
      [InterEventTime=  12.00]
R0050:C00136-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:O-13SDF          9.74      .578 No_date   28:21   44.42 .545      .000
      [CN= 81.0: N= 3.00: Tp=  .43]
      [IaREC= 4.00: SMIN= 25.21: SMAX=168.09: SK= .010]
      [InterEventTime=  12.00]
R0050:C00137-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:O-13SDF          9.74      .578 No_date   28:21   44.42  n/a      .000
                out <=    1.0 01:SDF              9.74      .061 No_date   30:55   44.42  n/a      .000
           overflow <=    1.0 03:OVFSDF            .00      .000 No_date    0:00     .00  n/a      .000
     {MxStoUsed=.2427E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00138-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:DRAIN5         460.69     8.038 No_date   29:27   37.49  n/a      .000
                    +     1.0 02:D5               1.90      .089 No_date   28:40   47.27  n/a      .000
                    +     1.0 02:SDF              9.74      .061 No_date   30:55   44.42  n/a      .000
                 SUM=     1.0 01:PT6MC          472.33     8.151 No_date   29:27   37.68  n/a      .000
R0050:C00139-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:O-15            10.67      .800 No_date   28:13   43.28 .531      .000
      [CN= 82.0: N= 3.00: Tp=  .30]
      [IaREC= 4.00: SMIN= 23.09: SMAX=153.94: SK= .010]
      [InterEventTime=  12.00]
R0050:C00140-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:PT6MC          472.33     8.151 No_date   29:27   37.68  n/a      .000
                    +     1.0 02:O-15            10.67      .800 No_date   28:13   43.28  n/a      .000
                 SUM=     1.0 01:M-C            483.00     8.281 No_date   29:26   37.80  n/a      .000
R0050:C00141-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:M-C            483.00     8.281 No_date   29:26   37.80  n/a      .000
     [RDT= 1.00] out<-    1.0 01:O-14Ch         483.00     7.494 No_date   29:58   37.80  n/a      .000
      [L/S/n=  845./ .100/.033]
      {Vmax=  .549:Dmax= 1.780}
R0050:C00142-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:O-14             5.00      .616 No_date   28:04   43.28 .531      .000
      [CN= 82.0: N= 3.00: Tp=  .13]
      [IaREC= 4.00: SMIN= 23.09: SMAX=153.94: SK= .010]
      [InterEventTime=  12.00]
R0050:C00143-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:O-14Ch         483.00     7.494 No_date   29:58   37.80  n/a      .000
                    +     1.0 02:O-14             5.00      .616 No_date   28:04   43.28  n/a      .000
                 SUM=     1.0 01:OKEEFE         488.00     7.533 No_date   29:58   37.86  n/a      .000
#******************************************************************************
#    Okeefe Pond
#    - Rating curve obtained assuming 40m3/ha in 24 hours for quality control
#      and a ratio of the catchment area to the West Clarke pond rating curve
#      from the MSS for the next coordinates
#******************************************************************************
R0050:C00144-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-D2          18.67     3.334 No_date   28:01   63.95 .785      .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .75:LGI= 353.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0050:C00145-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-D3           6.79     1.304 No_date   28:00   63.95 .785      .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .75:LGI= 213.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0050:C00146-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N_OK         53064.36   125.350 No_date   33:43   33.60  n/a      .000
                    +     1.0 02:OKEEFE         488.00     7.533 No_date   29:58   37.86  n/a      .000
                    +     1.0 02:S-1-D2          18.67     3.334 No_date   28:01   63.95  n/a      .000
                    +     1.0 02:S-1-D3           6.79     1.304 No_date   28:00   63.95  n/a      .000
                 SUM=     1.0 01:SN_OK        53577.82   128.036 No_date   33:19   33.65  n/a      .000
```

```
R0050:C00147-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_OK       53577.82  128.036 No_date   33:19   33.65  n/a     .000
      fname :SN_OK.0050
      remark:Total Flows at Okeefe Drain
#
# Hydrograph from Node Okeefe routed to Node at Foster Drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 6215
#
R0050:C00148-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_OK       53577.82  128.036 No_date   33:19   33.65  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N_FO        53577.82  127.650 No_date   33:44   33.65  n/a     .000
      [L/S/n= 1183./ .076/.035]
      {Vmax= 1.239:Dmax= 3.374}
#*****************************************************************************
#    Catchment FOSTER
#    - To Foster ditch (north of the Jock)
#    - Partially developed (medium density); remaining agricultural
#    - 2020-12-01 JFSA Foster area is 332 as per Foster SWMF Environmental Study Report, CH2MHILL, Aug 2013.
#    - 2020-12-01 decrease Foster drainage area from (373 HA) to (307.98 HA) after increasing Okeefe drainage area to (5
#    - 2021-02-12  update Foster area to 325.44 ha as measured from QGIS
#*****************************************************************************
R0050:C00149-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:FOSTER        325.44   32.213 No_date   28:11   58.69 .720     .000
      [XIMP=.55:TIMP=.55]
      [LOSS= 2 :CN= 74.0]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1473.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 36.67: SMAX=244.49: SK= .010]
#*****************************************************************************
#    Foster Pond
#    - Rating curve obtained assuming 40m3/ha in 24 hours for quality control
#      and a ratio of the catchment area to the West Clarke pond rating curve
#      from the MSS for the next coordinates
#*****************************************************************************
R0050:C00150-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:FOSTER        325.44   32.213 No_date   28:11   58.69  n/a     .000
                out <=    1.0 01:P_FOS         325.44    8.155 No_date   29:03   58.69  n/a     .000
           overflow <=    1.0 03:FO-OVF           .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.7887E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00151-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:P_FOS         325.44    8.155 No_date   29:03   58.69  n/a     .000
                    +     1.0 02:FO-OVF           .00     .000 No_date    0:00     .00  n/a     .000
                 SUM=     1.0 01:FOSTER-OUT    325.44    8.155 No_date   29:03   58.69  n/a     .000
#*****************************************************************************
R0050:C00152-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:W_CLAR_BRA     73.29   10.462 No_date   28:05   63.49 .779     .000
      [XIMP=.60:TIMP=.65]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 699.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0050:C00153-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:W_CLAR_BRA     73.29   10.462 No_date   28:05   63.49  n/a     .000
                out <=    1.0 01:MS_P10         73.29    1.204 No_date   29:09   63.49  n/a     .000
           overflow <=    1.0 03:P10-OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.1950E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00154-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-FO-D2       4.94     .796 No_date   28:01   58.69 .720     .000
      [XIMP=.55:TIMP=.55]
      [LOSS= 2 :CN= 74.0]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 181.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 36.67: SMAX=244.49: SK= .010]
R0050:C00155-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:FOSTER-OUT    325.44    8.155 No_date   29:03   58.69  n/a     .000
                    +     1.0 02:S-1-FO-D2       4.94     .796 No_date   28:01   58.69  n/a     .000
                 SUM=     1.0 01:980           330.38    8.232 No_date   29:01   58.69  n/a     .000
R0050:C00156-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:980           330.38    8.232 No_date   29:01   58.69  n/a     .000
      fname :980.0050
      remark:Total Flows at Station 980 on Foster Drain
#
# Hydrograph from Node Foster SWM (Station 980)to Node at station 520
# Channel X-Section obtained from RVCA Hydraulic Model - Station 980
#
R0050:C00157-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:980           330.38    8.232 No_date   29:01   58.69  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:980-out       330.38    7.857 No_date   29:22   58.69  n/a     .000
      [L/S/n=  460./ .043/.035]
      {Vmax=  .593:Dmax= 1.601}
R0050:C00158-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-FO-D1       5.11     .927 No_date   28:00   63.41 .778     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 74.0]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 185.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 36.67: SMAX=244.49: SK= .010]
R0050:C00159-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:980-out       330.38    7.857 No_date   29:22   58.69  n/a     .000
                    +     1.0 02:S-1-FO-D1       5.11     .927 No_date   28:00   63.41  n/a     .000
                 SUM=     1.0 01:520           335.49    7.915 No_date   29:22   58.76  n/a     .000
R0050:C00160-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:520           335.49    7.915 No_date   29:22   58.76  n/a     .000
      fname :520.0050
      remark:Total Flows at Sation 520 on Foster Drain
# Hydrograph from Node at Station 520 (Foster Drain) to Node at station 6016 (Jock River)
# Channel X-Section obtained from RVCA Hydraulic Model - Station 520
#
R0050:C00161-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:520           335.49    7.915 No_date   29:22   58.76  n/a     .000
     [RDT= 1.00] out<-    1.0 01:520-out       335.49    7.880 No_date   29:26   58.76  n/a     .000
      [L/S/n=  860./ .587/.035]
      {Vmax= 1.532:Dmax=  .761}
R0050:C00162-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-FO-F-D    14.96    2.535 No_date   28:01   63.41 .778     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 74.0]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 316.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 36.67: SMAX=244.49: SK= .010]
R0050:C00163-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-D8          5.27    1.052 No_date   28:01   46.77 .574     .000
      [XIMP=.32:TIMP=.65]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI= .75:LGI= 187.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00164-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:S-1-A          75.88    3.042 No_date   28:36   39.91 .490     .000
      [CN= 77.0: N= 3.00: Tp=  .62]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0050:C00165-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:W_CLAR_UND    35.65     .943 No_date   29:10   39.91 .490     .000
      [CN= 77.0: N= 3.00: Tp= 1.10]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0050:C00166-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N_FO        53577.82  127.650 No_date   33:44   33.65  n/a     .000
                    +     1.0 02:520-out       335.49    7.880 No_date   29:26   58.76  n/a     .000
                    +     1.0 02:MS_P10         73.29    1.204 No_date   29:09   63.49  n/a     .000
                    +     1.0 02:P10-OVF          .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:W_CLAR_UND    35.65     .943 No_date   29:10   39.91  n/a     .000
                    +     1.0 02:S-1-FO-F-D    14.96    2.535 No_date   28:01   63.41  n/a     .000
                    +     1.0 02:S-1-D8         5.27    1.052 No_date   28:01   46.77  n/a     .000
                    +     1.0 02:S-1-A         75.88    3.042 No_date   28:36   39.91  n/a     .000
                 SUM=     1.0 01:SN_FO       54118.36  132.647 No_date   33:20   33.87  n/a     .000
R0050:C00167-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_FO       54118.36  132.647 No_date   33:20   33.87  n/a     .000
      fname :SN_FO.0050
      remark:Total Flows at Foster Drain
# Hydrograph from Node Foster routed to Node at Cedarview Road
# Channel X-Section obtained from RVCA Hydraulic Model - Station 6016
#
R0050:C00168-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_FO       54118.36  132.647 No_date   33:20   33.87  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:N_CE        54118.36  132.435 No_date   33:45   33.87  n/a     .000
      [L/S/n=  159./ .082/.035]
      {Vmax= 1.441:Dmax= 4.166}
#*****************************************************************************
#    Catchment S-1
#    - To Jock River (north and south of Jock)
#    - Primarily agricultural fields; portion of sand quarry
#*****************************************************************************
R0050:C00169-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:S-1-B          55.36    2.770 No_date   28:23   39.91 .490     .000
      [CN= 77.0: N= 3.00: Tp=  .45]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
#    -  JFSA 2021-02-24 change the name from S-1-BCDC to S-1-A and S-1-B. Change their TP values based on the new areas
#    -  JFSA 2021-02-24 "S-1-BCDC-1" and "S-1-BCDC-2" are not existing anymore. "S-1-BCDC-1" is part of "S-1-FO-D2" and
#    -  JFSA 2021-01-19, after adding Greenbank pond, "S-1-BCDC-3" is not existing anymore
R0050:C00170-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-D1         21.67    3.809 No_date   28:01   63.95 .785     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .75:LGI= 380.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0050:C00171-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-D4          3.28     .652 No_date   28:00   63.95 .785     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .75:LGI= 148.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0050:C00172-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-D5         12.84    2.360 No_date   28:01   63.95 .785     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .75:LGI= 293.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0050:C00173-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-D6          1.75     .357 No_date   28:00   63.95 .785     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .75:LGI= 108.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0050:C00174-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-D7          2.03     .411 No_date   28:00   63.95 .785     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .75:LGI= 116.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
#    Catchment W_CLAR
#    - To West Clarke Drain (south of the Jock)
#    - Subdivision with 43% imp. as per Barrhaven South MSS
#    - 2020-11-30 update CLARKE Tributary Drainage Area to  = 121 ha based on P598(04)-11
#    - 2020-11-30 split CLARKE Drainage Area to MAJOR and ALL
#*****************************************************************************
R0050:C00175-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:W_CLAR_MJ       1.77     .319 No_date   28:00   59.44 .729     .000
      [XIMP=.46:TIMP=.59]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 109.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
# 5-Year + 12% Capture
R0050:C00176-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:W_CLAR_MJ       1.77     .319 No_date   28:00   59.44  n/a     .000
                out <=    1.0 01:W_CLAR_MJn      1.70     .213 No_date   27:53   59.44  n/a     .000
           overflow <=    1.0 03:W_CLAR_MJj       .08     .102 No_date   28:01   59.44  n/a     .000
     {MxStoUsed=.1125E-03  m3, TotOvfVol=.4485E-02  m3, N-Ovf=    1, TotDurOvf=    0.hrs}
R0050:C00177-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:W_CLAR_ALL    119.40   17.358 No_date   28:04   63.49 .779     .000
      [XIMP=.60:TIMP=.65]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 892.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0050:C00178-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:W_CLAR_ALL    119.40   17.358 No_date   28:04   63.49  n/a     .000
                    +     1.0 02:W_CLAR_MJj       .08     .102 No_date   28:01   59.44  n/a     .000
                 SUM=     1.0 01:W_CLAR        119.47   17.371 No_date   28:04   63.49  n/a     .000
R0050:C00179-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:W_CLAR        119.47   17.371 No_date   28:04   63.49  n/a     .000
      fname :W_CLAR.0050
      remark:Total Flows to West Clarke
#*****************************************************************************
#    West Clarke Pond 2
#    - Rating curve obtained from Barrhaven South MSS modeling
#    - Tributary Drainage Area to MSS Pond 2 = 241 ha
#*****************************************************************************
R0050:C00180-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:W_CLAR        119.47   17.371 No_date   28:04   63.49  n/a     .000
                out <=    1.0 01:MS_P2         119.47   10.246 No_date   28:16   63.49  n/a     .000
           overflow <=    1.0 03:P2-OVF           .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.3076E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
#*****************************************************************************
R0050:C00181-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N_CE        54118.36  132.435 No_date   33:45   33.87  n/a     .000
                    +     1.0 02:S-1-D4          3.28     .652 No_date   28:00   63.95  n/a     .000
                    +     1.0 02:S-1-D5         12.84    2.360 No_date   28:01   63.95  n/a     .000
                    +     1.0 02:MS_P2         119.47   10.246 No_date   28:16   63.49  n/a     .000
                    +     1.0 02:P2-OVF           .00     .000 No_date    0:00     .00  n/a     .000
                 SUM=     1.0 01:SN_CE       54253.95  133.341 No_date   33:45   33.95  n/a     .000
R0050:C00182-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_CE       54253.95  133.341 No_date   33:45   33.95  n/a     .000
      fname :SN_CE.0050
      remark:Total Flows before Station 5737 on Jock River
# Channel X-Section obtained from RVCA Hydraulic Model - Station 5737
# 2021-02-25 add station 5737 before station 5002. Station 5737 was extracted from the HEC-RAS model T:\PROJ\1474-16\Des
# JFSA 2021-03-02  change the slope to 0.0175% instead of 0.02593 to stabilize the model
R0050:C00183-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_CE       54253.95  133.341 No_date   33:45   33.95  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:5737        54253.95  125.432 No_date   35:56   33.95  n/a     .000
      [L/S/n=  270./ .018/.035]
      {Vmax=  .825:Dmax= 5.266}
R0050:C00184-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:5737        54253.95  125.432 No_date   35:56   33.95  n/a     .000
                    +     1.0 02:S-1-D1         21.67    3.809 No_date   28:01   63.95  n/a     .000
                    +     1.0 02:S-1-D6          1.75     .357 No_date   28:00   63.95  n/a     .000
                    +     1.0 02:S-1-D7          2.03     .411 No_date   28:00   63.95  n/a     .000
                 SUM=     1.0 01:5002        54279.41  125.526 No_date   35:56   33.96  n/a     .000
R0050:C00185-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:5002        54279.41  125.526 No_date   35:56   33.96  n/a     .000
      fname :5002.0050
      remark:Total Flows before Station 5002 on Jock River
# Hydrograph from Node Cedarview Road routed to Node at West Clarke Drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 5002
# JFSA 2021-02-19 Change the slope from 0.01 % (as per Stantec Report 2007) to 0.0255 % so the model will be more stable
# JFSA 2021-02-19 Change to three ROUTE CHANNEL with length 275 m each instead of one with 825 m length so the model wil
# JFSA 2021-02-26 change the length of 5002 route channel from 825 m to 736 m. That is because of adding station 5737 be
R0050:C00186-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:5002        54279.41  125.526 No_date   35:56   33.96  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:N_WCa       54279.41  125.506 No_date   36:03   33.96  n/a     .000
      [L/S/n=  245./ .095/.035]
      {Vmax= 1.264:Dmax= 2.962}
R0050:C00187-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:N_WCa       54279.41  125.506 No_date   36:03   33.96  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:N_WCb       54279.41  125.490 No_date   36:09   33.96  n/a     .000
      [L/S/n=  245./ .095/.035]
      {Vmax= 1.264:Dmax= 2.961}
R0050:C00188-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:N_WCb       54279.41  125.490 No_date   36:09   33.96  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:N_WC        54279.41  125.479 No_date   36:14   33.96  n/a     .000
      [L/S/n=  245./ .095/.035]
      {Vmax= 1.264:Dmax= 2.961}
#*****************************************************************************
# Hydrograph from Node West Clarke routed to Node at Kennedy - Burnett Drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 4534
#
R0050:C00189-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:N_WC        54279.41  125.479 No_date   36:14   33.96  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:N_KB        54279.41  125.282 No_date   36:02   33.96  n/a     .000
      [L/S/n= 1020./ .050/.035]
      {Vmax= 1.122:Dmax= 3.740}
#*****************************************************************************
#    Catchment KEN_BU
#    - To Kennedy-Burnett SWM Facility
#    - Outlets to Fraser-Clarke drain (north of the Jock)
#    - Medium density residential subdivision
#*****************************************************************************
#*****************************************************************************
#    Existing Kennedy-Burnett SWM Facility
#    - Rating curve obtained from URTKBP
#    - Tributary Drainage Area to Pond = 160 ha
#*****************************************************************************
R0050:C00190-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-01A         40.82    4.812 No_date   28:10   33.07 .406     .000
      [XIMP=.10:TIMP=.40]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI= .50:LGI= 522.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00191-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-01A         40.82    4.812 No_date   28:10   33.07  n/a     .000
      Major System   /    1.0 02:KB-01A-MJ        .00     .000 No_date    0:00     .00  n/a     .000
      Minor System   \    1.0 03:KB-01A-MN      40.82    3.600 No_date   28:00   33.14  n/a     .000
      {MjSysSto=.1012E+04, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00192-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-01A-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:KB-01A-MN      40.82    3.600 No_date   28:00   33.14  n/a     .000
                 SUM=     1.0 01:KB-01A-S       40.82    3.600 No_date   28:00   33.14  n/a     .000
R0050:C00193-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-01B         31.10    3.541 No_date   28:07   36.47 .447     .000
      [XIMP=.19:TIMP=.38]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .42:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI= .42:LGI= 455.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00194-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-01B         31.10    3.541 No_date   28:07   36.47  n/a     .000
      Major System   /    1.0 02:KB-01B-MJ        .00     .000 No_date    0:00     .00  n/a     .000
      Minor System   \    1.0 03:KB-01B-MN      31.10    1.585 No_date   27:53   36.51  n/a     .000
      {MjSysSto=.2627E+04, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00195-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-01B-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:KB-01B-MN      31.10    1.585 No_date   27:53   36.51  n/a     .000
                 SUM=     1.0 01:KB-01B-S       31.10    1.585 No_date   27:53   36.51  n/a     .000
R0050:C00196-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-01C         13.78    2.163 No_date   28:04   37.72 .463     .000
      [XIMP=.20:TIMP=.41]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI= .50:LGI= 303.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00197-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-01C         13.78    2.163 No_date   28:04   37.72  n/a     .000
      Major System   /    1.0 02:KB-01C-MJ        .00     .000 No_date    0:00     .00  n/a     .000
      Minor System   \    1.0 03:KB-01C-MN      13.78    1.350 No_date   27:55   37.86  n/a     .000
      {MjSysSto=.5764E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00198-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-01C-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:KB-01C-MN      13.78    1.350 No_date   27:55   37.86  n/a     .000
                 SUM=     1.0 01:KB-01C-S       13.78    1.350 No_date   27:55   37.86  n/a     .000
R0050:C00199-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-03          84.78   11.183 No_date   28:07   37.17 .456     .000
      [XIMP=.20:TIMP=.39]
```

```
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI= .63:LGI= 752.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00200------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-03          84.78   11.183 No_date   28:07   37.17  n/a      .000
     Major System   /     1.0 02:KB-03-MJ         .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:KB-03-MN       84.78    5.270 No_date   27:54   37.24  n/a      .000
      {MjSysSto=.6453E+04, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00201------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-03-MJ         .00     .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:KB-03-MN       84.78    5.270 No_date   27:54   37.24  n/a      .000
                 SUM=     1.0 01:KB-03-S        84.78    5.270 No_date   27:54   37.24  n/a      .000
R0050:C00202------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-04           6.95    1.592 No_date   28:00   71.86 .882      .000
      [XIMP=.85:TIMP=.85]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .94:SLPI= .50:LGI= 215.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00203------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-04           6.95    1.592 No_date   28:00   71.86  n/a      .000
     Major System   /     1.0 02:KB-04-MJ         .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:KB-04-MN        6.95     .503 No_date   27:44   72.11  n/a      .000
      {MjSysSto=.9423E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00204------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-04-MJ         .00     .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:KB-04-MN        6.95     .503 No_date   27:44   72.11  n/a      .000
                 SUM=     1.0 01:KB-04-S         6.95     .503 No_date   27:44   72.11  n/a      .000
R0050:C00205------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-05           5.19    1.270 No_date   28:00   75.92 .931      .000
      [XIMP=.93:TIMP=.93]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 186.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00206------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-06          12.93    3.268 No_date   28:00   73.20 .898      .000
      [XIMP=.87:TIMP=.87]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .94:SLPI=4.75:LGI= 294.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00207------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-06          12.93    3.268 No_date   28:00   73.20  n/a      .000
     Major System   /     1.0 02:KB-06-MJ         .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:KB-06-MN       12.93    2.262 No_date   27:52   73.67  n/a      .000
      {MjSysSto=.4323E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00208------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-06-MJ         .00     .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:KB-06-MN       12.93    2.262 No_date   27:52   73.67  n/a      .000
                 SUM=     1.0 01:KB-06-S        12.93    2.262 No_date   27:52   73.67  n/a      .000
R0050:C00209------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-11           4.03     .921 No_date   28:00   61.82 .758      .000
      [XIMP=.68:TIMP=.68]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI=2.00:LGI= 164.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00210------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-11           4.03     .921 No_date   28:00   61.82  n/a      .000
     Major System   /     1.0 02:KB-11-MJ         .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:KB-11-MN        4.03     .577 No_date   27:52   62.10  n/a      .000
      {MjSysSto=.1581E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00211------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-11-MJ         .00     .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:KB-11-MN        4.03     .577 No_date   27:52   62.10  n/a      .000
                 SUM=     1.0 01:KB-11-S         4.03     .577 No_date   27:52   62.10  n/a      .000
R0050:C00212------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S1              4.99    1.304 No_date   28:00   75.92 .931      .000
      [XIMP=.93:TIMP=.93]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=2.00:LGI= 182.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00213------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-15           2.15     .497 No_date   28:00   69.00 .847      .000
      [XIMP=.79:TIMP=.79]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .16:SLPI= .30:LGI= 120.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00214------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-01A-S       40.82    3.600 No_date   28:00   33.14  n/a      .000
                    +     1.0 02:KB-01B-S       31.10    1.585 No_date   27:53   36.51  n/a      .000
                    +     1.0 02:KB-01C-S       13.78    1.350 No_date   27:55   37.86  n/a      .000
                    +     1.0 02:KB-03-S        84.78    5.270 No_date   27:54   37.24  n/a      .000
                    +     1.0 02:KB-04-S         6.95     .503 No_date   27:44   72.11  n/a      .000
                    +     1.0 02:KB-05           5.19    1.270 No_date   28:00   75.92  n/a      .000
                    +     1.0 02:KB-06-S        12.93    2.262 No_date   27:52   73.67  n/a      .000
                    +     1.0 02:KB-11-S         4.03     .577 No_date   27:52   62.10  n/a      .000
                    +     1.0 02:KB-15           2.15     .497 No_date   28:00   69.00  n/a      .000
                    +     1.0 02:S1              4.99    1.304 No_date   28:00   75.92  n/a      .000
                 SUM=     1.0 01:KB-P1         206.72   18.218 No_date   28:00   42.53  n/a      .000
R0050:C00215------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:KB-P1         206.72   18.218 No_date   28:00   42.53  n/a      .000
                out <=    1.0 01:KB-P1R        198.38   12.438 No_date   28:02   42.53  n/a      .000
           overflow <=    1.0 03:KB-P1ovf        8.34    5.573 No_date   28:02   42.53  n/a      .000
     {MxStoUsed=.7313E+00  m3, TotOvfVol=.3545E+00  m3, N-Ovf=    2, TotDurOvf=    1.hrs}
R0050:C00216------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-P1R        198.38   12.438 No_date   28:02   42.53  n/a      .000
                    +     1.0 02:KB-P1ovf        8.34    5.573 No_date   28:02   42.53  n/a      .000
                 SUM=     1.0 01:KB-Pond1      206.72   18.011 No_date   28:02   42.53  n/a      .000
R0050:C00217------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:KB-Pond1      206.72   18.011 No_date   28:02   42.53  n/a      .000
      fname :KB-Pond1.0050
      remark:Total Flows at KB first pond
R0050:C00218------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-07          10.86    2.656 No_date   28:00   72.58 .890      .000
      [XIMP=.86:TIMP=.86]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI=2.00:LGI= 269.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00219------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-07          10.86    2.656 No_date   28:00   72.58  n/a      .000
     Major System   /     1.0 02:KB-07-MJ         .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:KB-07-MN       10.86    2.094 No_date   28:08   72.95  n/a      .000
      {MjSysSto=.1950E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00220------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-07-MJ         .00     .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:KB-07-MN       10.86    2.094 No_date   28:08   72.95  n/a      .000
                 SUM=     1.0 01:KB-07-S        10.86    2.094 No_date   28:08   72.95  n/a      .000
R0050:C00221------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-08           6.61    1.444 No_date   28:00   59.78 .733      .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI=2.00:LGI= 210.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00222------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-08           6.61    1.444 No_date   28:00   59.78  n/a      .000
     Major System   /     1.0 02:KB-08-MJ         .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:KB-08-MN        6.61    1.058 No_date   27:53   60.05  n/a      .000
      {MjSysSto=.1439E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00223------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-08-MJ         .00     .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:KB-08-MN        6.61    1.058 No_date   27:53   60.05  n/a      .000
                 SUM=     1.0 01:KB-08-S         6.61    1.058 No_date   27:53   60.05  n/a      .000
R0050:C00224------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-09           2.60     .665 No_date   28:00   71.90 .882      .000
      [XIMP=.86:TIMP=.86]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=2.00:LGI= 132.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00225------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-10_1         2.37     .607 No_date   28:00   71.90 .882      .000
      [XIMP=.86:TIMP=.86]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=2.00:LGI= 126.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00226------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-10_2         1.14     .295 No_date   28:00   71.90 .882      .000
      [XIMP=.86:TIMP=.86]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=2.00:LGI=  87.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00227------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-12           4.86    1.174 No_date   28:00   68.26 .837      .000
      [XIMP=.79:TIMP=.79]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.10:SLPI=2.00:LGI= 180.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00228------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-12           4.86    1.174 No_date   28:00   68.26  n/a      .000
     Major System   /     1.0 02:KB-12-MJ         .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:KB-12-MN        4.86     .867 No_date   28:09   68.93  n/a      .000
      {MjSysSto=.1203E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00229------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-12-MJ         .00     .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:KB-12-MN        4.86     .867 No_date   28:09   68.93  n/a      .000
                 SUM=     1.0 01:KB-12-S         4.86     .867 No_date   28:09   68.93  n/a      .000
R0050:C00230------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-13          10.19    2.184 No_date   28:00   59.78 .733      .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI=2.00:LGI= 261.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00231------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-13          10.19    2.184 No_date   28:00   59.78  n/a      .000
     Major System   /     1.0 02:KB-13-MJ         .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:KB-13-MN       10.19    1.722 No_date   27:55   60.01  n/a      .000
      {MjSysSto=.1587E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00232------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-13-MJ         .00     .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:KB-13-MN       10.19    1.722 No_date   27:55   60.01  n/a      .000
                 SUM=     1.0 01:KB-13-S        10.19    1.722 No_date   27:55   60.01  n/a      .000
R0050:C00233------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-14           5.47    1.201 No_date   28:00   59.78 .733      .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI=2.00:LGI= 191.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00234------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-14           5.47    1.201 No_date   28:00   59.78  n/a      .000
     Major System   /     1.0 02:KB-14-MJ         .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:KB-14-MN        5.47     .873 No_date   27:53   60.02  n/a      .000
      {MjSysSto=.1239E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00235------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-14-MJ         .00     .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:KB-14-MN        5.47     .873 No_date   27:53   60.02  n/a      .000
                 SUM=     1.0 01:KB-14-S         5.47     .873 No_date   27:53   60.02  n/a      .000
R0050:C00236------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-16_2         3.42     .724 No_date   28:01   64.30 .789      .000
      [XIMP=.71:TIMP=.71]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .16:SLPI= .30:LGI= 151.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00237------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-Pond1      206.72   18.011 No_date   28:02   42.53  n/a      .000
                    +     1.0 02:KB-07-S        10.86    2.094 No_date   28:08   72.95  n/a      .000
                    +     1.0 02:KB-08-S         6.61    1.058 No_date   27:53   60.05  n/a      .000
                    +     1.0 02:KB-09           2.60     .665 No_date   28:00   71.90  n/a      .000
                    +     1.0 02:KB-10_1         2.37     .607 No_date   28:00   71.90  n/a      .000
                    +     1.0 02:KB-10_2         1.14     .295 No_date   28:00   71.90  n/a      .000
                    +     1.0 02:KB-12-S         4.86     .867 No_date   28:09   68.93  n/a      .000
                    +     1.0 02:KB-13-S        10.19    1.722 No_date   27:55   60.01  n/a      .000
                    +     1.0 02:KB-14-S         5.47     .873 No_date   27:53   60.02  n/a      .000
                    +     1.0 02:KB-16_2         3.42     .724 No_date   28:01   64.30  n/a      .000
                 SUM=     1.0 01:KB-P2         254.24   26.339 No_date   28:02   46.87  n/a      .000
R0050:C00238------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:KB-P2         254.24   26.339 No_date   28:02   46.87  n/a      .000
                out <=    1.0 01:KB-P2R        253.10   17.634 No_date   28:09   46.87  n/a      .000
           overflow <=    1.0 03:KB-P2ovf        1.14    5.257 No_date   28:09   46.87  n/a      .000
     {MxStoUsed=.1109E+01  m3, TotOvfVol=.5351E-01  m3, N-Ovf=    1, TotDurOvf=    0.hrs}
R0050:C00239------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-P2R        253.10   17.634 No_date   28:09   46.87  n/a      .000
                    +     1.0 02:KB-P2ovf        1.14    5.257 No_date   28:09   46.87  n/a      .000
                 SUM=     1.0 01:KB-Pond2      254.24   22.891 No_date   28:09   46.87  n/a      .000
R0050:C00240------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:KB-Pond2      254.24   22.891 No_date   28:09   46.87  n/a      .000
      fname :KB-Pond2.0050
      remark:Total Flows at KB second pond
R0050:C00241------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-16_1         2.80     .624 No_date   28:00   66.65 .818      .000
      [XIMP=.75:TIMP=.75]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .16:SLPI= .30:LGI= 137.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00242------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-Pond2      254.24   22.891 No_date   28:09   46.87  n/a      .000
                    +     1.0 02:KB-16_1         2.80     .624 No_date   28:00   66.65  n/a      .000
                 SUM=     1.0 01:KB-P3         257.04   23.147 No_date   28:09   47.08  n/a      .000
R0050:C00243------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:KB-P3         257.04   23.147 No_date   28:09   47.08  n/a      .000
                out <=    1.0 01:KB-P3R          9.40     .051 No_date   17:13   47.07  n/a      .000
           overflow <=    1.0 03:KB-P3ovf      247.64   22.286 No_date   28:10   47.08  n/a      .000
     {MxStoUsed=.1988E-02  m3, TotOvfVol=.1166E+02  m3, N-Ovf=    1, TotDurOvf=   23.hrs}
R0050:C00244------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-P3R          9.40     .051 No_date   17:13   47.07  n/a      .000
                    +     1.0 02:KB-P3ovf      247.64   22.286 No_date   28:10   47.08  n/a      .000
                 SUM=     1.0 01:KB-Pond3      257.04   22.337 No_date   28:10   47.08  n/a      .000
R0050:C00245------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:KB-Pond3      257.04   22.337 No_date   28:10   47.08  n/a      .000
      fname :KB-Pond3.0050
      remark:Total Flows at KB third pond
#*****************************************************************************
#    EXISTING / PROPOSED Subcatchments (Kennedy-Burnett SWM Facility (118080), SWM Modeling Approach, NOVATECH Report Ju
#    - TO FRASER-CLARKE DRAIN
#*****************************************************************************
R0050:C00246------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:FC-01           8.03    1.483 No_date   28:01   49.52 .608      .000
      [XIMP=.47:TIMP=.47]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 231.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00247------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:FC-01           8.03    1.483 No_date   28:01   49.52  n/a      .000
     Major System   /     1.0 02:FC-01-MJ         .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:FC-01-MN        8.03     .756 No_date   28:32   49.91  n/a      .000
      {MjSysSto=.4662E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00248------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:FC-01-MJ         .00     .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:FC-01-MN        8.03     .756 No_date   27:51   49.91  n/a      .000
                 SUM=     1.0 01:FC-01-S         8.03     .756 No_date   27:51   49.91  n/a      .000
R0050:C00249------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:FC-02          16.05    3.831 No_date   28:00   75.92 .931      .000
      [XIMP=.93:TIMP=.93]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 327.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00250------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:FC-02          16.05    3.831 No_date   28:00   75.92  n/a      .000
     Major System   /     1.0 02:FC-02-MJ         .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:FC-02-MN       16.05    1.159 No_date   27:43   75.94  n/a      .000
      {MjSysSto=.2348E+04, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00251------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:FC-02-MJ         .00     .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:FC-02-MN       16.05    1.159 No_date   27:43   75.94  n/a      .000
                 SUM=     1.0 01:FC-02-S        16.05    1.159 No_date   27:43   75.94  n/a      .000
R0050:C00252------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:FC-03           7.37    1.540 No_date   28:00   59.28 .727      .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 222.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00253------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:FC-03           7.37    1.540 No_date   28:00   59.28  n/a      .000
     Major System   /     1.0 02:FC-03-MJ         .02     .092 No_date   28:14   59.28  n/a      .000
     Minor System   \     1.0 03:FC-03-MN        7.35     .358 No_date   27:42   59.51  n/a      .000
      {MjSysSto=.1131E+04, TotOvfVol=.1375E+02, N-Ovf=    1, TotDurOvf=    0.hrs}
R0050:C00254------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:FC-03-MJ         .02     .092 No_date   28:14   59.28  n/a      .000
                    +     1.0 02:FC-03-MN        7.35     .358 No_date   27:42   59.51  n/a      .000
                 SUM=     1.0 01:FC-03-S         7.37     .450 No_date   28:14   59.51  n/a      .000
R0050:C00255------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:FC-04          12.87    2.587 No_date   28:01   59.28 .727      .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 293.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00256------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:FC-04          12.87    2.587 No_date   28:01   59.28  n/a      .000
     Major System   /     1.0 02:FC-04-MJ         .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:FC-04-MN       12.87     .741 No_date   27:44   59.54  n/a      .000
      {MjSysSto=.1729E+04, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00257------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:FC-04-MJ         .00     .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:FC-04-MN       12.87     .741 No_date   27:44   59.54  n/a      .000
                 SUM=     1.0 01:FC-04-S        12.87     .741 No_date   27:44   59.54  n/a      .000
#*****************************************************************************
#    PROPOSED Subcatchments (Kennedy-Burnett SWM Facility (118080), SWM Modeling Approach, NOVATECH Report June, 2020)
#    - TO JOCK RIVER
#*****************************************************************************
R0050:C00258------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:JR-01           8.24    1.714 No_date   28:00   59.28 .727      .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 234.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00259------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:JR-01           8.24    1.714 No_date   28:00   59.28  n/a      .000
     Major System   /     1.0 02:JR-01-MJ         .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:JR-01-MN        8.24     .563 No_date   28:59   59.48  n/a      .000
      {MjSysSto=.9643E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00260------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:JR-01-MJ         .00     .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:JR-01-MN        8.24     .563 No_date   27:44   59.48  n/a      .000
                 SUM=     1.0 01:JR-01-S         8.24     .563 No_date   27:44   59.48  n/a      .000
R0050:C00261------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:JR-02           1.59     .357 No_date   28:00   59.28 .727      .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 103.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00262------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:JR-02           1.59     .357 No_date   28:00   59.28  n/a      .000
     Major System   /     1.0 02:JR-02-MJ         .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:JR-02-MN        1.59     .153 No_date   27:45   59.66  n/a      .000
      {MjSysSto=.1319E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00263------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:JR-02-MJ         .00     .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:JR-02-MN        1.59     .153 No_date   27:45   59.66  n/a      .000
                 SUM=     1.0 01:JR-02-S         1.59     .153 No_date   27:45   59.66  n/a      .000
#*****************************************************************************
#    Catchment FRASER
#    - To Fraser-Clarke drain (north of the Jock)
#    - Developed land with assumed 43% imp.
#    - 2020-12-17 Change Fraser area to be 35.1 as measured from QGIS
#    - 2020-12-17 All Fraser is undeveloped (Nashyd)
```

```
#***************************************************************************
R0050:C00264------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:FRASER-DRN    13.65      .711 No_date   28:22   39.91 .490     .000
      [CN= 77.0: N= 3.00: Tp=  .43]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0050:C00265------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:FRASER-D      21.61     3.688 No_date   28:01   62.97 .773     .000
      [XIMP=.58:TIMP=.58]
      [LOSS= 2 :CN= 80.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 380.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 26.32: SMAX=175.50: SK= .010]
R0050:C00266------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:FRASER-D      21.61     3.688 No_date   28:01   62.97  n/a     .000
     Major System   /     1.0 02:FRASER-J        .00      .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:FRASER-N      21.61     2.281 No_date   27:53   63.21  n/a     .000
      {MjSysSto=.7987E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00267------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:FRASER-J        .00      .000 No_date    0:00     .00  n/a     .000
                   +      1.0 02:FRASER-N      21.61     2.281 No_date   27:53   63.21  n/a     .000
                SUM=      1.0 01:FRASER-S      21.61     2.281 No_date   27:53   63.21  n/a     .000
R0050:C00268------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-Pond3     257.04    22.337 No_date   28:10   47.08  n/a     .000
                   +      1.0 02:S-1-B         55.36     2.770 No_date   28:23   39.91  n/a     .000
                   +      1.0 02:FRASER-DRN    13.65      .711 No_date   28:22   39.91  n/a     .000
                   +      1.0 02:FRASER-S      21.61     2.281 No_date   27:53   63.21  n/a     .000
                   +      1.0 02:N_KB       54279.41   125.282 No_date   36:02   33.96  n/a     .000
                   +      1.0 02:FC-01-S        8.03      .756 No_date   27:51   49.91  n/a     .000
                   +      1.0 02:FC-02-S       16.05     1.159 No_date   27:43   75.94  n/a     .000
                   +      1.0 02:FC-03-S        7.37      .450 No_date   28:14   59.51  n/a     .000
                SUM=      1.0 01:4241       54658.52   126.092 No_date   36:02   34.06  n/a     .000
R0050:C00269------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:4241       54658.52   126.092 No_date   36:02   34.06  n/a     .000
      fname :4241.0050
      remark:Total Flows at Ken-Burnett Outlet
# Hydrograph from Node Ken-Burnett to station 3633
# Channel X-Section obtained from RVCA Hydraulic Model - Station 4241
#
R0050:C00270------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:4241       54658.52   126.092 No_date   36:02   34.06  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:4241-out   54658.52   126.088 No_date   36:02   34.06  n/a     .000
      [L/S/n=  294./ .109/.035]
      {Vmax= 1.329:Dmax= 2.424}
R0050:C00271------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:4241-out   54658.52   126.088 No_date   36:02   34.06  n/a     .000
                   +      1.0 02:FC-04-S       12.87      .741 No_date   27:44   59.54  n/a     .000
                   +      1.0 02:JR-01-S        8.24      .563 No_date   27:44   59.48  n/a     .000
                   +      1.0 02:JR-02-S        1.59      .153 No_date   27:45   59.66  n/a     .000
                SUM=      1.0 01:SN_KB      54681.21   126.145 No_date   36:02   34.07  n/a     .000
R0050:C00272------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_KB      54681.21   126.145 No_date   36:02   34.07  n/a     .000
      fname :SN_KB.0050
      remark:HYD_COMMENT=["Total Flows before Station 3633]
# Hydrograph from Station 3633 to Node Todd
# Channel X-Section obtained from RVCA Hydraulic Model - Station 3633
# JFSA 2021-02-26 change the channel length (at station 3633) from 650m to 608m and change the slope from 0.0498% to 0.2
#
R0050:C00273------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_KB      54681.21   126.145 No_date   36:02   34.07  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N_TO       54681.21   125.879 No_date   36:02   34.07  n/a     .000
      [L/S/n=  608./ .247/.035]
      {Vmax= 1.807:Dmax= 1.819}
#***************************************************************************
#    Catchment Greenbank
#    - To Greenbank Drain (south of the Jock)
#    - JFSA 2021-01-18 add Greenbank pond as per JFSA, P598(06)-15, June 2016
#    - JFSA 2021-01-19 update area from 37.479 ha to 36.6 ha based on GIS measurements
#***************************************************************************
R0050:C00274------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:Greenbank     36.60     6.286 No_date   28:02   65.04 .798     .000
      [XIMP=.64:TIMP=.68]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 494.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0050:C00275------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:Greenbank     36.60     6.286 No_date   28:02   65.04  n/a     .000
                out <=    1.0 01:GreenB_MN     36.60     4.176 No_date   28:09   65.04  n/a     .000
           overflow <=    1.0 03:GreenB_MJ       .00      .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.9063E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00276------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N_TO       54681.21   125.879 No_date   36:02   34.07  n/a     .000
                   +      1.0 02:GreenB_MJ       .00      .000 No_date    0:00     .00  n/a     .000
                   +      1.0 02:GreenB_MN     36.60     4.176 No_date   28:09   65.04  n/a     .000
                SUM=      1.0 01:GreenB     54717.81   126.050 No_date   36:02   34.09  n/a     .000
R0050:C00277------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:GreenB     54717.81   126.050 No_date   36:02   34.09  n/a     .000
      fname :GreenB.0050
      remark:Total Flows at Greenbank Drain
#***************************************************************************
#    Catchment TODD
#    - To Todd Drain (south of the Jock)
#    - Subdivision with 43% imp. as per Barrhaven South MSS
#    - 2020-11-30 increase imp. based on P598(04)-11
#    - 2020-11-30 update TODD Tributary Drainage Area to  = 146.015 ha based on P598(04)-11
#    - 2020-11-30 split TODD Drainage Area to MAJOR, MINOR, POND and ALL
#***************************************************************************
#    - JFSA 2021-01-19 add "TODD_MN1" as part of Clarke("W_CLAR_MJ") and remove it from Todd
R0050:C00278------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:TODD_MN2       2.10      .384 No_date   28:00   60.14 .738     .000
      [XIMP=.53:TIMP=.57]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 118.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0050:C00279------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:TODD_MN3        .12      .022 No_date   28:00   60.13 .738     .000
      [XIMP=.53:TIMP=.57]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI=  28.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0050:C00280------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:TODD_MJ       30.23     4.894 No_date   28:02   61.85 .759     .000
      [XIMP=.52:TIMP=.64]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 449.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0050:C00281------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:TODD_ALL     112.91    15.270 No_date   28:04   59.95 .735     .000
      [XIMP=.52:TIMP=.57]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 868.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0050:C00282------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:TODD_P         3.06      .600 No_date   28:00   63.61 .780     .000
      [XIMP=.63:TIMP=.63]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 143.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
# 5-Year + 12% Capture
R0050:C00283------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:TODD_MJ       30.23     4.894 No_date   28:02   61.85  n/a     .000
                out <=    1.0 01:TODD_MJn      28.89     3.314 No_date   27:54   61.87  n/a     .000
           overflow <=    1.0 03:TODD_MJj       1.34     1.567 No_date   28:02   61.85  n/a     .000
     {MxStoUsed=.1169E-02  m3, TotOvfVol=.8285E-01  m3, N-Ovf=    1, TotDurOvf=    0.hrs}
# 5-Year + 12% Capture
R0050:C00284------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:TODD_MN2       2.10      .384 No_date   28:00   60.14  n/a     .000
                out <=    1.0 01:TODD_MN2n      2.02      .268 No_date   27:53   60.14  n/a     .000
           overflow <=    1.0 03:TODD_MN2j       .08      .111 No_date   28:00   60.14  n/a     .000
     {MxStoUsed=.1643E-03  m3, TotOvfVol=.4631E-02  m3, N-Ovf=    1, TotDurOvf=    0.hrs}
R0050:C00285------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:TODD_MN3        .12      .022 No_date   28:00   60.13  n/a     .000
                out <=    1.0 01:TODD_MN3n       .11      .016 No_date   27:52   60.13  n/a     .000
           overflow <=    1.0 03:TODD_MN3j       .00      .006 No_date   28:00   60.13  n/a     .000
     {MxStoUsed=.8712E-04  m3, TotOvfVol=.2472E-03  m3, N-Ovf=    1, TotDurOvf=    0.hrs}
R0050:C00286------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A2            25.50     3.441 No_date   28:03   55.89 .686     .000
      [XIMP=.42:TIMP=.52]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 566.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0050:C00287------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A2            25.50     3.441 No_date   28:03   55.89  n/a     .000
     Major System   /     1.0 02:A2-MJ           .64     1.180 No_date   28:07   55.89  n/a     .000
     Minor System   \     1.0 03:A2-MN         24.86     1.818 No_date   28:39   56.08  n/a     .000
      {MjSysSto=.9240E+03, TotOvfVol=.3586E+03, N-Ovf=    1, TotDurOvf=    0.hrs}
R0050:C00288------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:TODD_MN2n      2.02      .268 No_date   27:53   60.14  n/a     .000
                   +      1.0 02:TODD_MN3n       .11      .016 No_date   27:52   60.13  n/a     .000
                   +      1.0 02:TODD_MJj       1.34     1.567 No_date   28:02   61.85  n/a     .000
                   +      1.0 02:TODD_P         3.06      .600 No_date   28:00   63.61  n/a     .000
                   +      1.0 02:TODD_ALL     112.91    15.270 No_date   28:04   59.95  n/a     .000
                   +      1.0 02:W_CLAR_MJn     1.70      .213 No_date   27:53   59.44  n/a     .000
                SUM=      1.0 01:TODD         121.14    17.643 No_date   28:03   60.06  n/a     .000
R0050:C00289------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:TODD         121.14    17.643 No_date   28:03   60.06  n/a     .000
      fname :TODD.0050
      remark:Total Flows at Todd Drain
#***************************************************************************
#    Todd Pond 3
#    - Rating curve obtained from Barrhaven South MSS modeling
#    - stantec 2007, Tributary Drainage Area to MSS Pond 3 = 193 ha
#***************************************************************************
R0050:C00290------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:TODD         121.14    17.643 No_date   28:03   60.06  n/a     .000
                out <=    1.0 01:MS_P3        121.14    12.815 No_date   28:10   60.05  n/a     .000
           overflow <=    1.0 03:P3-OVF          .00      .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.2728E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00291------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:GreenB     54717.81   126.050 No_date   36:02   34.09  n/a     .000
                   +      1.0 02:MS_P3        121.14    12.815 No_date   28:10   60.05  n/a     .000
                   +      1.0 02:P3-OVF          .00      .000 No_date    0:00     .00  n/a     .000
                   +      1.0 02:TODD_MN2j       .08      .111 No_date   28:00   60.14  n/a     .000
                   +      1.0 02:A2-MJ           .64     1.180 No_date   28:07   55.89  n/a     .000
                SUM=      1.0 01:SN_TO      54839.66   126.489 No_date   36:02   34.15  n/a     .000
R0050:C00292------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_TO      54839.66   126.489 No_date   36:02   34.15  n/a     .000
      fname :SN_TO.0050
      remark:Total Flows at Todd Drain
#
# Hydrograph from Todd Drain routed to Corrigan Drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 2462
# 2021-02-19 Change the slope from 0.033 % (as per Stantec Report 2007) to 0.05 % so the model will be more stable and g
R0050:C00293------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_TO      54839.66   126.489 No_date   36:02   34.15  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:N_TO       54839.66   126.325 No_date   36:29   34.15  n/a     .000
      [L/S/n=  280./ .050/.045]
      {Vmax=  .889:Dmax= 3.463}
R0050:C00294------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:N_TO       54839.66   126.325 No_date   36:29   34.15  n/a     .000
      fname :N_TO.0050
      remark:Total inflows at Station 2462
#***************************************************************************
#    Catchment CORRIG
#    - To Corrigan Drain (south of the Jock)
#    - Primarily Developed (medium density)
#    - JFSA JAN 2021, add Corrigan subcatchments as per IBI, July 2008
#***************************************************************************
R0050:C00295------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:corr1         15.87     2.851 No_date   28:01   63.61 .780     .000
      [XIMP=.63:TIMP=.63]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 325.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0050:C00296------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:corr1         15.87     2.851 No_date   28:01   63.61  n/a     .000
     Major System   /     1.0 02:corr1-MJ        .00      .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:corr1-MN      15.87     1.818 No_date   28:19   63.67  n/a     .000
      {MjSysSto=.5297E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00297------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:corr2         12.47      .330 No_date   29:10   39.91 .490     .000
      [CN= 77.0: N= 3.00: Tp= 1.10]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0050:C00298------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A1-Corrig     15.75     2.330 No_date   28:01   55.89 .686     .000
      [XIMP=.42:TIMP=.52]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 324.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0050:C00299------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A1-Corrig     15.75     2.330 No_date   28:01   55.89  n/a     .000
     Major System   /     1.0 02:A1-MJ           .00      .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A1-MN         15.75     1.818 No_date   27:56   56.07  n/a     .000
      {MjSysSto=.1953E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00300------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:B1             2.77      .119 No_date   28:09   24.96 .306     .000
      [CN= 56.0: N= 3.00: Tp=  .23]
      [IaREC= 4.00: SMIN= 79.69: SMAX=531.24: SK= .010]
      [InterEventTime=  12.00]
R0050:C00301------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A4             1.27      .239 No_date   28:00   63.95 .785     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 253.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0050:C00302------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A4             1.27      .239 No_date   28:00   63.95  n/a     .000
     Major System   /     1.0 02:A4-MJ           .00      .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A4-MN          1.27      .239 No_date   28:00   63.95  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00303------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:A1-MJ           .00      .000 No_date    0:00     .00  n/a     .000
                   +      1.0 02:A1-MN         15.75     1.818 No_date   27:56   56.07  n/a     .000
                   +      1.0 02:corr1-MJ        .00      .000 No_date    0:00     .00  n/a     .000
                   +      1.0 02:corr1-MN      15.87     1.818 No_date   28:19   63.67  n/a     .000
                   +      1.0 02:corr2         12.47      .330 No_date   29:10   39.91  n/a     .000
                   +      1.0 02:B1             2.77      .119 No_date   28:09   24.96  n/a     .000
                   +      1.0 02:A4-MN          1.27      .239 No_date   28:00   63.95  n/a     .000
                SUM=      1.0 01:MH101         48.13     4.028 No_date   28:02   52.81  n/a     .000
R0050:C00304------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH101         48.13     4.028 No_date   28:02   52.81  n/a     .000
      fname :MH101.0050
      remark:Total Flows at MH101
R0050:C00305------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH101         48.13     4.028 No_date   28:02   52.81  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:101-102       48.13     4.005 No_date   28:03   52.81  n/a     .000
      [L/S/n=  368./ .540/.013]
      {Vmax= 3.143:Dmax= 1.119}
      [Din= 1.05:Dused= 1.36}
R0050:C00306------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:A2-MN         24.86     1.818 No_date   28:39   56.08  n/a     .000
                   +      1.0 02:101-102       48.13     4.005 No_date   28:03   52.81  n/a     .000
                SUM=      1.0 01:MH102         72.99     5.823 No_date   28:03   53.92  n/a     .000
R0050:C00307------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH102         72.99     5.823 No_date   28:03   53.92  n/a     .000
      fname :MH102.0050
      remark:Total Flows at MH102
R0050:C00308------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A5             1.60      .312 No_date   28:01   66.69 .818     .000
      [XIMP=.71:TIMP=.71]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 300.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0050:C00309------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:A4-MJ           .00      .000 No_date    0:00     .00  n/a     .000
                   +      1.0 02:A5             1.60      .312 No_date   28:01   66.69  n/a     .000
                SUM=      1.0 01:A5T            1.60      .312 No_date   28:01   66.69  n/a     .000
R0050:C00310------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A5T            1.60      .312 No_date   28:01   66.69  n/a     .000
     Major System   /     1.0 02:A5-MJ           .00      .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A5-MN          1.60      .312 No_date   28:01   66.69  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00311------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH102         72.99     5.823 No_date   28:03   53.92  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:102-103       72.99     5.773 No_date   28:14   53.92  n/a     .000
      [L/S/n=  504./ .280/.013]
      {Vmax= 2.694:Dmax= 1.453}
      [Din= 1.50:Dused= 1.77}
R0050:C00312------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:102-103       72.99     5.773 No_date   28:14   53.92  n/a     .000
                   +      1.0 02:A5-MN          1.60      .312 No_date   28:01   66.69  n/a     .000
                SUM=      1.0 01:MH103         74.59     5.961 No_date   28:03   54.19  n/a     .000
R0050:C00313------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH103         74.59     5.961 No_date   28:03   54.19  n/a     .000
      fname :MH103.0050
      remark:Total Flows at MH103
R0050:C00314------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH103         74.59     5.961 No_date   28:03   54.19  n/a     .000
     [RDT= 1.00] out<-    1.0 01:103-104       74.59     5.915 No_date   28:07   54.19  n/a     .000
      [L/S/n=  438./ .460/.013]
      {Vmax= 3.295:Dmax= 1.301}
      [Din= 1.65:Dused= 1.65}
R0050:C00315------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A6             1.56      .306 No_date   28:00   66.69 .818     .000
      [XIMP=.71:TIMP=.71]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 280.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0050:C00316------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:A5-MJ           .00      .000 No_date    0:00     .00  n/a     .000
                   +      1.0 02:A6             1.56      .306 No_date   28:00   66.69  n/a     .000
                SUM=      1.0 01:A6T            1.56      .306 No_date   28:00   66.69  n/a     .000
R0050:C00317------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A6T            1.56      .306 No_date   28:00   66.69  n/a     .000
     Major System   /     1.0 02:A6-MJ           .00      .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A6-MN          1.56      .306 No_date   28:00   66.69  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00318------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:A6-MN          1.56      .306 No_date   28:00   66.69  n/a     .000
                   +      1.0 02:103-104       74.59     5.915 No_date   28:07   54.19  n/a     .000
                   +      1.0 02:TODD_MJn      28.89     3.314 No_date   27:54   61.87  n/a     .000
                SUM=      1.0 01:MH104        105.04     9.444 No_date   28:04   56.49  n/a     .000
R0050:C00319------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH104        105.04     9.444 No_date   28:04   56.49  n/a     .000
      fname :MH104.0050
      remark:Total Flows at MH104
R0050:C00320------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:B2            12.31     1.758 No_date   28:02   56.26 .690     .000
      [XIMP=.41:TIMP=.54]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 417.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0050:C00321------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:B2            12.31     1.758 No_date   28:02   56.26  n/a     .000
     Major System   /     1.0 02:B2-MJ           .00      .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:B2-MN         12.31     1.029 No_date   27:53   56.54  n/a     .000
```

```
       {MjSysSto=.4799E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00322------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:B2-MN          12.31    1.029 No_date   27:53   56.54  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:315-333        12.31    1.029 No_date   28:33   56.54  n/a     .000
       [L/S/n=  254./ .100/.013]
       {Vmax= 1.220:Dmax=  .838}
       [Din= 1.20:Dused= 1.20}
R0050:C00323------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:B3              5.59     .825 No_date   28:01   56.26 .690     .000
       [XIMP=.41:TIMP=.54]
       [LOSS= 2 :CN= 75.0]
       [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 345.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 33.81: SMAX=225.43: SK= .010]
R0050:C00324------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:B3              5.59     .825 No_date   28:01   56.26  n/a     .000
     Major System   /     1.0 02:B3-MJ            .02     .083 No_date   28:09   56.26  n/a     .000
     Minor System   \     1.0 03:B3-MN           5.57     .459 No_date   27:52   56.28  n/a     .000
       {MjSysSto=.2270E+03, TotOvfVol=.1279E+02, N-Ovf=    1, TotDurOvf=    0.hrs}
R0050:C00325------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:B3-MN           5.57     .459 No_date   27:52   56.28  n/a     .000
                    +     1.0 02:315-333        12.31    1.029 No_date   28:33   56.54  n/a     .000
                 SUM=     1.0 01:MH333          17.88    1.488 No_date   28:32   56.46  n/a     .000
R0050:C00326------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH333          17.88    1.488 No_date   28:32   56.46  n/a     .000
       fname :MH333.0050
       remark:Total Flows at MH333
R0050:C00327------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH333          17.88    1.488 No_date   28:32   56.46  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:333-335        17.88    1.479 No_date   28:19   56.46  n/a     .000
       [L/S/n=  251./ .100/.013]
       {Vmax= 1.302:Dmax= 1.057}
       [Din= 1.20:Dused= 1.29}
R0050:C00328------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:333-335        17.88    1.479 No_date   28:19   56.46  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:335-338        17.88    1.478 No_date   28:16   56.46  n/a     .000
       [L/S/n=  185./ .100/.013]
       {Vmax= 1.300:Dmax= 1.054}
       [Din= 1.20:Dused= 1.28}
R0050:C00329------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:335-338        17.88    1.478 No_date   28:16   56.46  n/a     .000
     [RDT= 1.00] out<-    1.0 01:338-340        17.88    1.454 No_date   28:18   56.46  n/a     .000
       [L/S/n=  233./ .100/.013]
       {Vmax= 1.330:Dmax=  .979}
       [Din= 1.35:Dused= 1.35}
R0050:C00330------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:B4              7.60    1.094 No_date   28:02   56.26 .690     .000
       [XIMP=.41:TIMP=.54]
       [LOSS= 2 :CN= 75.0]
       [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 388.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 33.81: SMAX=225.43: SK= .010]
R0050:C00331------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:B4              7.60    1.094 No_date   28:02   56.26  n/a     .000
     Major System   /     1.0 02:B4-MJ            .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:B4-MN           7.60     .655 No_date   27:53   56.27  n/a     .000
       {MjSysSto=.2780E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00332------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:338-340        17.88    1.454 No_date   28:18   56.46  n/a     .000
                    +     1.0 02:B4-MN           7.60     .655 No_date   27:53   56.27  n/a     .000
                 SUM=     1.0 01:MH340          25.48    2.109 No_date   28:18   56.41  n/a     .000
R0050:C00333------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH340          25.48    2.109 No_date   28:18   56.41  n/a     .000
       fname :MH340.0050
       remark:Total Flows at MH340
R0050:C00334------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH340          25.48    2.109 No_date   28:18   56.41  n/a     .000
     [RDT= 1.00] out<-    1.0 01:340-104        25.48    2.090 No_date   28:18   56.41  n/a     .000
       [L/S/n=  240./ .150/.013]
       {Vmax= 1.723:Dmax=  .918}
       [Din= 1.65:Dused= 1.65}
R0050:C00335------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:340-104        25.48    2.090 No_date   28:18   56.41  n/a     .000
                    +     1.0 02:MH104         105.04    9.444 No_date   28:04   56.49  n/a     .000
                 SUM=     1.0 01:MH104T        130.52   11.391 No_date   28:07   56.48  n/a     .000
R0050:C00336------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH104T        130.52   11.391 No_date   28:07   56.48  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:104-105       130.52   11.118 No_date   28:10   56.48  n/a     .000
       [L/S/n=  380./ .100/.013]
       {Vmax= 2.107:Dmax= 2.003}
       {HGTH= 2.36:WDTH= 2.70}
R0050:C00337------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:B5              2.20     .390 No_date   28:00   60.29 .740     .000
       [XIMP=.57:TIMP=.57]
       [LOSS= 2 :CN= 75.0]
       [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 187.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 33.81: SMAX=225.43: SK= .010]
R0050:C00338------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:B5              2.20     .390 No_date   28:00   60.29  n/a     .000
     Major System   /     1.0 02:B5-MJ            .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:B5-MN           2.20     .260 No_date   27:53   60.60  n/a     .000
       {MjSysSto=.5913E+02, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00339------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A8               .96     .198 No_date   28:00   66.69 .818     .000
       [XIMP=.71:TIMP=.71]
       [LOSS= 2 :CN= 75.0]
       [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 186.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 33.81: SMAX=225.43: SK= .010]
R0050:C00340------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:A6-MJ            .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:A8               .96     .198 No_date   28:00   66.69  n/a     .000
                 SUM=     1.0 01:A8T              .96     .198 No_date   28:00   66.69  n/a     .000
R0050:C00341------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A8T              .96     .198 No_date   28:00   66.69  n/a     .000
     Major System   /     1.0 02:A8-MJ            .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A8-MN            .96     .198 No_date   28:00   66.69  n/a     .000
       {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00342------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:104-105       130.52   11.118 No_date   28:10   56.48  n/a     .000
                    +     1.0 02:B5-MN           2.20     .260 No_date   27:53   60.60  n/a     .000
                    +     1.0 02:A8-MN            .96     .198 No_date   28:00   66.69  n/a     .000
                    +     1.0 02:TODD_MN3j        .00     .006 No_date   28:00   60.13  n/a     .000
                 SUM=     1.0 01:MH105         133.68   11.441 No_date   28:10   56.62  n/a     .000
R0050:C00343------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH105         133.68   11.441 No_date   28:10   56.62  n/a     .000
       fname :MH105.0050
       remark:Total Flows at MH105
R0050:C00344------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
 *  DIVERT HYD      ->    1.0 01:A8-MJ            .00     .000 No_date    0:00     .00  n/a     .000
           diverted <=    1.0 02:A8-MJ-JR         .00     .000 No_date    0:00     .00  n/a     .000
           diverted <=    1.0 03:A8-MJ-B6         .00     .000 No_date    0:00     .00  n/a     .000
R0050:C00345------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    DIVERT HYD      ->    1.0 01:MH105         133.68   11.441 No_date   28:10   56.62  n/a     .000
           diverted <=    1.0 02:MH105-JR       35.42    8.432 No_date   28:10   56.62  n/a     .000
           diverted <=    1.0 03:MH105-B6       98.26    3.009 No_date   28:10   56.62  n/a     .000
R0050:C00346------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:B7              7.19    1.124 No_date   28:01   56.26 .690     .000
       [XIMP=.41:TIMP=.54]
       [LOSS= 2 :CN= 75.0]
       [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 211.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 33.81: SMAX=225.43: SK= .010]
R0050:C00347------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:B4-MJ            .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:B7              7.19    1.124 No_date   28:01   56.26  n/a     .000
                 SUM=     1.0 01:B7-B4MJ         7.19    1.124 No_date   28:01   56.26  n/a     .000
R0050:C00348------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:B7-B4MJ         7.19    1.124 No_date   28:01   56.26  n/a     .000
     Major System   /     1.0 02:B7R-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:B7R-MN          7.19     .629 No_date   27:51   56.37  n/a     .000
       {MjSysSto=.2888E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00349------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:B7R-MN          7.19     .629 No_date   27:51   56.37  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:360-106A        7.19     .629 No_date   28:28   56.37  n/a     .000
       [L/S/n=  167./ .100/.013]
       {Vmax= 1.089:Dmax=  .665}
       [Din= 1.05:Dused= 1.05}
R0050:C00350------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:B6              3.29     .535 No_date   28:00   56.26 .690     .000
       [XIMP=.41:TIMP=.54]
       [LOSS= 2 :CN= 75.0]
       [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 148.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 33.81: SMAX=225.43: SK= .010]
R0050:C00351------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:B6              3.29     .535 No_date   28:00   56.26  n/a     .000
     Major System   /     1.0 02:B6-MJ            .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:B6-MN           3.29     .064 No_date   27:33   56.32  n/a     .000
       {MjSysSto=.6238E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00352------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:EX-LAND        32.50    4.637 No_date   28:02   56.33 .691     .000
       [XIMP=.50:TIMP=.50]
       [LOSS= 2 :CN= 74.0]
       [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 465.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 36.67: SMAX=244.49: SK= .010]
R0050:C00353------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:EX-LAND        32.50    4.637 No_date   28:02   56.33  n/a     .000
     Major System   /     1.0 02:EX-LAND-MJ       .76    1.533 No_date   28:06   56.33  n/a     .000
     Minor System   \     1.0 03:EX-LAND-MN     31.74    2.275 No_date   27:49   56.55  n/a     .000
       {MjSysSto=.1365E+04, TotOvfVol=.4274E+03, N-Ovf=    1, TotDurOvf=    0.hrs}
R0050:C00354------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:B7R-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:EX-LAND-MJ       .76    1.533 No_date   28:06   56.33  n/a     .000
                    +     1.0 02:B5-MJ            .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:B6-MJ            .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:B6-MN           3.29     .064 No_date   27:33   56.32  n/a     .000
                    +     1.0 02:A8-MJ-B6         .00     .000 No_date    0:00     .00  n/a     .000
                 SUM=     1.0 01:B6-B7ExMJ       4.05    1.597 No_date   28:06   56.32  n/a     .000
R0050:C00355------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:B6-B7ExMJ       4.05    1.597 No_date   28:06   56.32  n/a     .000
     Major System   /     1.0 02:B6R-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:B6R-MN          4.05     .064 No_date   27:33   56.36  n/a     .000
       {MjSysSto=.4274E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00356------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH105-B6       98.26    3.009 No_date   28:10   56.62  n/a     .000
     [RDT= 1.00] out<-    1.0 01:105-106A       98.26    3.009 No_date   28:07   56.62  n/a     .000
       [L/S/n=  208./ .100/.013]
       {Vmax= 1.597:Dmax= 1.249}
       [Din= 1.80:Dused= 1.80}
R0050:C00357------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:360-106A        7.19     .629 No_date   28:28   56.37  n/a     .000
                    +     1.0 02:105-106A       98.26    3.009 No_date   28:07   56.62  n/a     .000
                    +     1.0 02:B6R-MN          4.05     .064 No_date   27:33   56.36  n/a     .000
                    +     1.0 02:B6R-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                 SUM=     1.0 01:MH106A        109.50    3.701 No_date   28:10   56.59  n/a     .000
R0050:C00358------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH106A        109.50    3.701 No_date   28:10   56.59  n/a     .000
       fname :MH106A.0050
       remark:Total Flows at MH106A
R0050:C00359------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH106A        109.50    3.701 No_date   28:10   56.59  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:106A-106      109.50    3.702 No_date   27:59   56.59  n/a     .000
       [L/S/n=  190./ .100/.013]
       {Vmax= 1.635:Dmax= 1.487}
       [Din= 1.80:Dused= 1.81}
R0050:C00360------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A9              2.44     .481 No_date   28:00   66.69 .818     .000
       [XIMP=.71:TIMP=.71]
       [LOSS= 2 :CN= 75.0]
       [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 262.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 33.81: SMAX=225.43: SK= .010]
R0050:C00361------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A9              2.44     .481 No_date   28:00   66.69  n/a     .000
     Major System   /     1.0 02:A9-MJ            .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A9-MN           2.44     .481 No_date   28:00   66.69  n/a     .000
R0050:C00362------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:106A-106      109.50    3.702 No_date   27:59   56.59  n/a     .000
                    +     1.0 02:A9-MN           2.44     .481 No_date   28:00   66.69  n/a     .000
                 SUM=     1.0 01:MH106         111.94    4.177 No_date   28:00   56.81  n/a     .000
R0050:C00363------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH106         111.94    4.177 No_date   28:00   56.81  n/a     .000
       fname :MH106.0050
       remark:Total Flows at MH106
R0050:C00364------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH106         111.94    4.177 No_date   28:00   56.81  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:106-107       111.94    4.129 No_date   28:00   56.81  n/a     .000
       [L/S/n=  123./ .100/.013]
       {Vmax= 1.685:Dmax= 1.556}
       [Din= 1.80:Dused= 1.90}
R0050:C00365------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A10             4.14     .602 No_date   28:01   53.20 .653     .000
       [XIMP=.35:TIMP=.47]
       [LOSS= 2 :CN= 75.0]
       [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 183.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 33.81: SMAX=225.43: SK= .010]
R0050:C00366------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A10             4.14     .602 No_date   28:01   53.20  n/a     .000
     Major System   /     1.0 02:A10-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A10-MN          4.14     .310 No_date   27:50   53.25  n/a     .000
       {MjSysSto=.1897E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00367------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A11            10.61    1.720 No_date   28:02   60.69 .745     .000
       [XIMP=.53:TIMP=.62]
       [LOSS= 2 :CN= 75.0]
       [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 379.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 33.81: SMAX=225.43: SK= .010]
R0050:C00368------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A11            10.61    1.720 No_date   28:02   60.69  n/a     .000
     Major System   /     1.0 02:A11-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A11-MN         10.61     .993 No_date   27:52   60.86  n/a     .000
       {MjSysSto=.4540E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00369------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:106-107       111.94    4.129 No_date   28:00   56.81  n/a     .000
                    +     1.0 02:A10-MN          4.14     .310 No_date   27:50   53.25  n/a     .000
                    +     1.0 02:A11-MN         10.61     .993 No_date   27:52   60.86  n/a     .000
                 SUM=     1.0 01:MH107         126.69    5.432 No_date   28:00   57.03  n/a     .000
R0050:C00370------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH107         126.69    5.432 No_date   28:00   57.03  n/a     .000
       fname :MH107.0050
       remark:Total Flows at MH107
R0050:C00371------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH107         126.69    5.432 No_date   28:00   57.03  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:107-119       126.69    5.345 No_date   28:00   57.03  n/a     .000
       [L/S/n=  114./ .120/.013]
       {Vmax= 1.927:Dmax= 1.660}
       [Din= 1.80:Dused= 2.02}
R0050:C00372------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:107-119       126.69    5.345 No_date   28:00   57.03  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:119-108       126.69    5.334 No_date   28:01   57.03  n/a     .000
       [L/S/n=   66./ .120/.013]
       {Vmax= 1.919:Dmax= 1.650}
       [Din= 1.80:Dused= 2.01}
R0050:C00373------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A12            12.29    1.938 No_date   28:01   56.26 .690     .000
       [XIMP=.41:TIMP=.54]
       [LOSS= 2 :CN= 75.0]
       [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 183.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 33.81: SMAX=225.43: SK= .010]
R0050:C00374------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A12            12.29    1.938 No_date   28:01   56.26  n/a     .000
     Major System   /     1.0 02:A12-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A12-MN         12.29    1.029 No_date   27:50   56.44  n/a     .000
       {MjSysSto=.5545E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00375------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A13             2.59     .487 No_date   28:01   66.69 .818     .000
       [XIMP=.71:TIMP=.71]
       [LOSS= 2 :CN= 75.0]
       [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 379.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 33.81: SMAX=225.43: SK= .010]
R0050:C00376------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A13             2.59     .487 No_date   28:01   66.69  n/a     .000
     Major System   /     1.0 02:A13-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A13-MN          2.59     .487 No_date   28:01   66.69  n/a     .000
R0050:C00377------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:Pond-Block      2.94     .430 No_date   28:00   53.21 .653     .000
       [XIMP=.41:TIMP=.41]
       [LOSS= 2 :CN= 75.0]
       [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 183.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 33.81: SMAX=225.43: SK= .010]
R0050:C00378------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:119-108       126.69    5.334 No_date   28:01   57.03  n/a     .000
                    +     1.0 02:A13-MN          2.59     .487 No_date   28:01   66.69  n/a     .000
                    +     1.0 02:A12-MN         12.29    1.029 No_date   27:50   56.44  n/a     .000
                 SUM=     1.0 01:MH108         141.57    6.850 No_date   28:01   57.16  n/a     .000
R0050:C00379------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH108         141.57    6.850 No_date   28:01   57.16  n/a     .000
       fname :MH108.0050
       remark:Total Flows at MH108
R0050:C00380------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH108         141.57    6.850 No_date   28:01   57.16  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:108-116       141.57    6.810 No_date   28:02   57.16  n/a     .000
       [L/S/n=   77./ .130/.013]
       {Vmax= 2.104:Dmax= 1.784}
       [Din= 1.80:Dused= 2.17}
R0050:C00381------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:108-116       141.57    6.810 No_date   28:02   57.16  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:116-corrig    141.57    6.771 No_date   28:02   57.16  n/a     .000
       [L/S/n=   80./ .130/.013]
       {Vmax= 2.101:Dmax= 1.780}
       [Din= 1.80:Dused= 2.17}
R0050:C00382------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:116-corrig    141.57    6.771 No_date   28:02   57.16  n/a     .000
                    +     1.0 02:Pond-Block      2.94     .430 No_date   28:00   53.21  n/a     .000
                 SUM=     1.0 01:Corrigan      144.51    7.185 No_date   28:02   57.08  n/a     .000
R0050:C00383------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:Corrigan      144.51    7.185 No_date   28:02   57.08  n/a     .000
       fname :Corrigan.0050
       remark:HYD_COMMENT=["Total Flows at Corrigan Pond]
R0050:C00384------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:Corrigan      144.51    7.185 No_date   28:02   57.08  n/a     .000
                out <=    1.0 01:Co-P          144.51    6.335 No_date   28:26   57.08  n/a     .000
           overflow <=    1.0 03:Co-P-OVF         .00     .000 No_date    0:00     .00  n/a     .000
      {MxStoUsed=.1027E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00385------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:Co-P-OVF         .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:Co-P          144.51    6.335 No_date   28:26   57.08  n/a     .000
                    +     1.0 02:N_TO        54839.66  126.325 No_date   36:29   34.15  n/a     .000
                    +     1.0 02:MH105-JR       35.42    8.432 No_date   28:10   56.62  n/a     .000
                    +     1.0 02:A8-MJ-JR         .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:A9-MJ            .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:A10-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:A11-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:A12-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:A13-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                 SUM=     1.0 01:corrig      55019.59  126.926 No_date   36:27   34.22  n/a     .000
R0050:C00386------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:corrig      55019.59  126.926 No_date   36:27   34.22  n/a     .000
       fname :corrig.0050
       remark:Total Flows at Corrigan Pond
#*******************************************************************************
#    Corrigan Pond 1
#    - Rating curve obtained from Barrhaven South MSS modeling
```

```
#    - Tributary Drainage Area to MSS Pond 1 = 145 ha
#*****************************************************************************
#
# Hydrograph from Corrigan Drain routed to Jockvale Road
# Channel X-Section obtained from RVCA Hydraulic Model - Station 2462
#
R0050:C00387-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:corrig     55019.59  126.926 No_date   36:27   34.22  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N_MI       55019.59  126.908 No_date   36:31   34.22  n/a     .000
      [L/S/n=  580./ .445/.045]
      {Vmax= 2.065:Dmax= 1.981}
#*****************************************************************************
#    Catchment MILLS
#    - To SWM Facility north of the Jock
#    - Primarily residental development
#*****************************************************************************
R0050:C00388-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:MILLS        175.99   17.756 No_date   28:06   50.66 .622     .000
      [XIMP=.38:TIMP=.38]
      [LOSS= 2 :CN= 74.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI=1118.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 36.67: SMAX=244.49: SK= .010]
#*****************************************************************************
#    Chapman Mills SWM Pond
#    - Rating curve obtained from CCL hydraulic modeling
#*****************************************************************************
R0050:C00389-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:MILLS        175.99   17.756 No_date   28:06   50.66  n/a     .000
                out <=    1.0 01:MILL_P       153.87    4.050 No_date   28:11   50.66  n/a     .000
           overflow <=    1.0 03:MIL-OV        22.12   12.440 No_date   28:11   50.66  n/a     .000
     {MxStoUsed=.2310E+01  m3, TotOvfVol=.1121E+01  m3, N-Ovf=    2, TotDurOvf=    1.hrs}
R0050:C00390-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N_MI       55019.59  126.908 No_date   36:31   34.22  n/a     .000
                     +    1.0 02:MIL-OV        22.12   12.440 No_date   28:11   50.66  n/a     .000
                     +    1.0 02:MILL_P       153.87    4.050 No_date   28:11   50.66  n/a     .000
                  SUM=    1.0 01:SN_MI      55195.58  127.533 No_date   36:30   34.27  n/a     .000
R0050:C00391-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_MI      55195.58  127.533 No_date   36:30   34.27  n/a     .000
      fname :SN_MI.0050
      remark:Total Flows at Jockvale Road
#
# Hydrograph from Jockvale Road routed to Heart's Desire
# Channel X-Section obtained from RVCA Hydraulic Model - Station 689
#
R0050:C00392-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_MI      55195.58  127.533 No_date   36:30   34.27  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N_DE       55195.58  127.235 No_date   36:43   34.27  n/a     .000
      [L/S/n= 1962./ .223/.045]
      {Vmax= 1.577:Dmax= 2.490}
#*****************************************************************************
#    Catchment DESIRE
#    - To Jock River (north of the Jock)
#    - Rural-estate subdivision (Heart's Desire Community)
#*****************************************************************************
R0050:C00393-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:DESIRE        23.78    2.563 No_date   28:03   46.85 .575     .000
      [XIMP=.25:TIMP=.25]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 400.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
#*****************************************************************************
#    Catchment JOCKVA
#    - To Jockvale SWM Facility
#    - Residential development & golf course
#    - JFSA 2021-01-11 update JOCKVA after updating CORRIG as per IBI GROUP, July 2008.
#      JOCKVA area became 225.13 ha instead of 257.63 ha. JOCKVA separated into two areas JOCKVA and EX-LAND 32.5 ha as
#*****************************************************************************
R0050:C00394-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:JOCKVA       225.13   25.253 No_date   28:07   56.33 .691     .000
      [XIMP=.50:TIMP=.50]
      [LOSS= 2 :CN= 74.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI=1311.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 36.67: SMAX=244.49: SK= .010]
R0050:C00395-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:EX-LAND-MN    31.74    2.275 No_date   27:49   56.55  n/a     .000
                     +    1.0 02:JOCKVA       225.13   25.253 No_date   28:07   56.33  n/a     .000
                     +    1.0 02:B2-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                     +    1.0 02:B3-MJ           .02     .083 No_date   28:09   56.26  n/a     .000
                  SUM=    1.0 01:JOCKVA-TO    256.89   27.528 No_date   28:07   56.36  n/a     .000
R0050:C00396-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:JOCKVA-TO    256.89   27.528 No_date   28:07   56.36  n/a     .000
      fname :JOCKVA-TO.0050
      remark:Total Flows at KB first pond
#*****************************************************************************
#    Jockvale SWM Facility
#    - Rating curve obtained from Jockvale Servicing Study (CCL 1999)
#*****************************************************************************
R0050:C00397-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:JOCKVA-TO    256.89   27.528 No_date   28:07   56.36  n/a     .000
                out <=    1.0 01:JOCK_P       256.89   10.991 No_date   28:38   56.36  n/a     .000
           overflow <=    1.0 03:JO-OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.5928E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00398-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N_DE       55195.58  127.235 No_date   36:43   34.27  n/a     .000
                     +    1.0 02:DESIRE        23.78    2.563 No_date   28:03   46.85  n/a     .000
                     +    1.0 02:JO-OVF          .00     .000 No_date    0:00     .00  n/a     .000
                     +    1.0 02:JOCK_P       256.89   10.991 No_date   28:38   56.36  n/a     .000
                  SUM=    1.0 01:SN_DE      55476.26  128.174 No_date   36:42   34.38  n/a     .000
R0050:C00399-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_DE      55476.26  128.174 No_date   36:42   34.38  n/a     .000
      fname :SN_DE.0050
      remark:Total Flows at Heart's Desire
#
# Hydrograph from Heart's Desire routed to Rideau River
# Channel X-Section obtained from RVCA Hydraulic Model - Station 0
#
R0050:C00400-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_DE      55476.26  128.174 No_date   36:42   34.38  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N1         55476.26  128.160 No_date   36:45   34.38  n/a     .000
      [L/S/n=  563./ .967/.045]
      {Vmax= 2.123:Dmax= 1.248}
#*****************************************************************************
#    Catchment S-2
#    - To Jock River (north and south)
#    - Undeveloped floodplain and river
#*****************************************************************************
R0050:C00401-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:S-2          102.94    4.795 No_date   28:20   35.39 .434     .000
      [CN= 72.0: N= 3.00: Tp=  .40]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
R0050:C00402-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N1         55476.26  128.160 No_date   36:45   34.38  n/a     .000
                     +    1.0 02:S-2          102.94    4.795 No_date   28:20   35.39  n/a     .000
                  SUM=    1.0 01:SN_N1      55579.20  128.417 No_date   36:44   34.38  n/a     .000
R0050:C00403-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_N1      55579.20  128.417 No_date   36:44   34.38  n/a     .000
      fname :SN_N1.0050
      remark:Total Flows at Rideau River
################################################################################
  ** END OF RUN :   99

*******************************************************************************************





 RUN#:COMMAND#
R0100:C00001--------------------------------------------------------------------------------
     START
      [TZERO =    .00 hrs on        0]
      [METOUT=   2    (1=imperial, 2=metric output)]
      [NSTORM=   1 ]
      [NRUN  = 0100 ]
#*****************************************************************************
#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
#*****************************************************************************
#  Project Name: [Jock River]    Project Number: [1474-16]
#  Date         : 04-03-2021
#  Modeller     : [M.M.]
#  Company      : JFSAinc.
#  License #    :  2549237
#*****************************************************************************
# CALIBRATION OF SUMMER MODEL PARAMETERS
# USING CONTINUOUS SIMULATIONS
# Rainfall data from JFSA raingauge installed at site + other gauges by the City
# Use data collected from May 1st to July 14, 2003
# 2020-11-30 change TMJSTO in COMPUTE DUALHYD (TMJSTO = 0.1 instead of 0.0001)
# 2020-12-01 correct pond curve values
# 2020-12-01 change W_CLAR_BRAZ XIMP to 0.55, SLPI=[0.5](%) (impervious slope), and LGI up to 700m
# 2021-02-19 Change the slope for ROUTE CHANNEL Station 2462 (NHYDout=["N_TO"] ,NHYDin=["SN_TO"]) from 0.033 % (as per S
# 2021-02-19 Change the slope for ROUTE CHANNEL Station 5002 (NHYDout=["N_WC"] ,NHYDin=["SN_CE"]) from 0.01 % (as per St
# ----------------------------------------------------------------------------
R0100:C00002--------------------------------------------------------------------------------
     READ STORM
      Filename = storm.001
      Comment  = Pluie SCS de 24 hres 1:100 ans pour Ottawa CDA
      [SDT=10.00:SDUR=  24.00:PTOT=  88.57]
R0100:C00003--------------------------------------------------------------------------------
     MODIFY STORM
      [RFACT=  1.00:TSHIFT= 960.00 min]
      [SDT=10.00:SDUR=  40.00:PTOT=  88.57]
R0100:C00004--------------------------------------------------------------------------------
     DEFAULT VALUES
      Filename = T:\PROJ\1474-16\Design\20201026-QuantityControlAnalysis\SWMHYMO\SMR-Model\updated3\CitiGate.DEF
      ICASEdv  = 1 (read and print data)
      FileTitle= File comment: [Based onvarious calibration exercises in Onta
               THE FOLLOWING PARAMETERS ARE USED IN THE DESIGN STANDHYD COM
      Horton's infiltration equation parameters:
      [Fo= 76.20 mm/hr] [Fc=13.20 mm/hr] [DCAY= 4.14 /hr] [F=  .00 mm]
      Parameters for PERVIOUS surfaces in STANDHYD:
      [IAper=   4.67 mm] [LGP=50.00 m] [MNP= .250]
      Parameters for IMPERVIOUS surfaces in STANDHYD:
      [IAimp=   1.57 mm] [CLI= 1.50]   [MNI= .013]
      Parameters used in NASHYD:
      [Ia=   4.67 mm] [N= 3.00]
      Average monthly Pan Evaporation data in    (mm)
   JAN   FEB   MAR   APR   MAY   JUN   JUL   AUG   SEP   OCT   NOV   DEC
   .00   .00   .00   .00   .00   .00   .00   .00   .00   .00   .00   .00
      Average monthly Potential Evapotranspiration in    (mm)
   JAN   FEB   MAR   APR   MAY   JUN   JUL   AUG   SEP   OCT   NOV   DEC
   .00   .00   .00   .00   .00   .00   .00   .00   .00   .00   .00   .00
R0100:C00005--------------------------------------------------------------------------------
     COMPUTE API
      [APIini= 50.00: APIkdy= .8500: APIkdt= .9989]
      {APImax=119.84: APIavg= 69.19: APImin= 44.87}
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.32
R0100:C00006-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:JR_HW       3680.00   21.616 No_date   36:52   35.18 .397     .000
      [CN= 64.0: N= 3.00: Tp= 7.13]
      [IaREC= 4.00: SMIN= 57.05: SMAX=380.32: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.32
R0100:C00007-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_13        971.00    8.203 No_date   32:33   32.84 .371     .000
      [CN= 61.0: N= 3.00: Tp= 3.76]
      [IaREC= 4.00: SMIN= 64.50: SMAX=430.01: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.80
R0100:C00008-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:JR_GWM      3074.00   10.428 No_date   39:59   28.29 .319     .000
      [CN= 55.0: N= 3.00: Tp=11.33]
      [IaREC= 4.00: SMIN= 83.24: SMAX=554.96: SK= .010]
      [InterEventTime=  12.00]
R0100:C00009-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:JR_ASH      1781.00   19.695 No_date   32:38   42.49 .480     .000
      [CN= 72.0: N= 3.00: Tp= 3.91]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
R0100:C00010-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_11        500.00   10.735 No_date   29:21   36.76 .415     .000
      [CN= 66.0: N= 3.00: Tp= 1.24]
      [IaREC= 4.00: SMIN= 52.62: SMAX=350.79: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.80
R0100:C00011-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:NN_CK       1917.00   14.496 No_date   34:24   36.76 .415     .000
      [CN= 66.0: N= 3.00: Tp= 5.29]
      [IaREC= 4.00: SMIN= 52.62: SMAX=350.79: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.52
R0100:C00012-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_10       5666.00   37.663 No_date   37:48   42.49 .480     .000
      [CN= 72.0: N= 3.00: Tp= 8.00]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.75
R0100:C00013-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:KG_CK       8376.00   36.118 No_date   39:59   36.76 .415     .000
      [CN= 66.0: N= 3.00: Tp=11.66]
      [IaREC= 4.00: SMIN= 52.62: SMAX=350.79: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.68
R0100:C00014-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_9        1132.00   16.501 No_date   30:52   40.82 .461     .000
      [CN= 70.0: N= 3.00: Tp= 2.51]
      [IaREC= 4.00: SMIN= 43.07: SMAX=287.10: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.82
R0100:C00015-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:NC_CK       4464.00   18.060 No_date   39:59   33.61 .380     .000
      [CN= 62.0: N= 3.00: Tp=11.32]
      [IaREC= 4.00: SMIN= 61.90: SMAX=412.66: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.80
R0100:C00016-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_8         131.00    3.259 No_date   28:57   34.39 .388     .000
      [CN= 63.0: N= 3.00: Tp=  .90]
      [IaREC= 4.00: SMIN= 59.42: SMAX=396.11: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.65
R0100:C00017-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:HB_DR       3854.00   21.238 No_date   38:28   36.76 .415     .000
      [CN= 66.0: N= 3.00: Tp= 8.42]
      [IaREC= 4.00: SMIN= 52.62: SMAX=350.79: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.82
R0100:C00018-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_7        3197.00   16.421 No_date   36:21   29.79 .336     .000
      [CN= 57.0: N= 3.00: Tp= 6.65]
      [IaREC= 4.00: SMIN= 76.32: SMAX=508.81: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.75
R0100:C00019-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_6         165.00    1.511 No_date   33:01   37.57 .424     .000
      [CN= 67.0: N= 3.00: Tp= 4.18]
      [IaREC= 4.00: SMIN= 50.55: SMAX=336.97: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.67
R0100:C00020-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:VG_DR       1332.00   10.882 No_date   35:10   42.49 .480     .000
      [CN= 72.0: N= 3.00: Tp= 5.95]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
R0100:C00021-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_5         224.00    9.576 No_date   28:44   47.62 .538     .000
      [CN= 77.0: N= 3.00: Tp=  .75]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.20
R0100:C00022-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:FL_CK       4945.00   52.056 No_date   33:16   44.17 .499     .000
      [CN= 74.0: N= 3.00: Tp= 4.45]
      [IaREC= 4.00: SMIN= 36.67: SMAX=244.49: SK= .010]
      [InterEventTime=  12.00]
R0100:C00023-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_5A2        20.00    1.097 No_date   28:35   52.06 .588     .000
      [CN= 81.0: N= 3.00: Tp=  .62]
      [IaREC= 4.00: SMIN= 25.21: SMAX=168.09: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.61
R0100:C00024-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_5A1      1412.00   10.184 No_date   37:44   45.88 .518     .000
      [CN= 75.0: N= 3.00: Tp= 8.00]
      [IaREC= 4.00: SMIN= 33.81: SMAX=225.43: SK= .010]
      [InterEventTime=  12.00]
R0100:C00025-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_4         585.00   14.953 No_date   29:55   52.06 .588     .000
      [CN= 81.0: N= 3.00: Tp= 1.75]
      [IaREC= 4.00: SMIN= 25.21: SMAX=168.09: SK= .010]
      [InterEventTime=  12.00]
R0100:C00026-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:LM_CK       1021.00   19.782 No_date   30:45   51.16 .578     .000
      [CN= 80.0: N= 3.00: Tp= 2.46]
      [IaREC= 4.00: SMIN= 26.32: SMAX=175.50: SK= .010]
      [InterEventTime=  12.00]
R0100:C00027-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_2         177.00    7.567 No_date   28:44   47.62 .538     .000
      [CN= 77.0: N= 3.00: Tp=  .75]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0100:C00028-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SM_DR       1122.00   17.981 No_date   31:42   52.06 .588     .000
      [CN= 81.0: N= 3.00: Tp= 3.25]
      [IaREC= 4.00: SMIN= 25.21: SMAX=168.09: SK= .010]
      [InterEventTime=  12.00]
R0100:C00029-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:MO_DR       2737.00   40.730 No_date   31:28   46.75 .528     .000
      [CN= 76.0: N= 3.00: Tp= 3.03]
      [IaREC= 4.00: SMIN= 32.46: SMAX=216.39: SK= .010]
      [InterEventTime=  12.00]
#
# Routing hydrographs
#
# Starting with the addition of Jock River Headwater and Subwatershed 13
#
R0100:C00030-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
```

```
    ADD HYD              1.0 02:JR_HW       3680.00   21.616 No_date   36:52   35.18  n/a     .000
                   +     1.0 02:SW_13        971.00    8.203 No_date   32:33   32.84  n/a     .000
                SUM=     1.0 01:S_N13       4651.00   27.660 No_date   35:21   34.69  n/a     .000
#
# Sum of hydrographs from Node 13 routed to Node 13A
# (Approximated cross-section - see cross-section 258)
# Use n=0.04 for summer conditions and n=0.025 for spring conditions
#
R0100:C00031------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->   1.0 02:S_N13       4651.00   27.660 No_date   35:21   34.69  n/a     .000
     [RDT= 1.00] out<-   1.0 01:N13A        4651.00   22.598 No_date   38:56   34.69  n/a     .000
      [L/S/n= 9074./ .022/.040]
      {Vmax=  .598:Dmax= 4.178}
#
# Addition of Subwatershed Jock River at Goodwood Marsh to Node 13A
#
R0100:C00032------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              1.0 02:N13A        4651.00   22.598 No_date   38:56   34.69  n/a     .000
                   +     1.0 02:JR_GWM      3074.00   10.428 No_date   39:59   28.29  n/a     .000
                SUM=     1.0 01:SN13A       7725.00   32.845 No_date   39:44   32.14  n/a     .000
#
# Insertion of a reservoir to simulate the effects of the Goodwood Marsh
#
R0100:C00033------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->   1.0 02:SN13A       7725.00   32.845 No_date   39:44   32.14  n/a     .000
                out <=   1.0 01:RES_GM      7725.00    3.950 No_date   62:26   32.14  n/a     .000
     {MxStoUsed=.1796E+03  m3}
#
R0100:C00034------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD             1.0 01:RES_GM      7725.00    3.950 No_date   62:26   32.14  n/a     .000
      fname :H_RESGM
      remark:Outflow from Res GM
# Output of Reservoir Goodwood Marsh routed from Node 13A to Node 12
# (Approximated cross-section - see cross-section 258)
# Use n=0.04 for summer conditions and n=0.025 for spring conditions
R0100:C00035------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->   1.0 02:RES_GM      7725.00    3.950 No_date   62:26   32.14  n/a     .000
     [RDT= 1.00] out<-   1.0 01:N12         7725.00    3.947 No_date   64:43   32.14  n/a     .000
      [L/S/n= 5926./ .076/.040]
      {Vmax=  .560:Dmax= 1.560}
#
# Addition of Subwatershed Jock River at Ashton to Node 12
#
R0100:C00036------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              1.0 02:N12         7725.00    3.947 No_date   64:43   32.14  n/a     .000
                   +     1.0 02:JR_ASH      1781.00   19.695 No_date   32:38   42.49  n/a     .000
                SUM=     1.0 01:S_N12       9506.00   21.745 No_date   32:41   34.08  n/a     .000
R0100:C00037------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD             1.0 01:S_N12       9506.00   21.745 No_date   32:41   34.08  n/a     .000
      fname :H_SN12
      remark:flow at S_N12 near Ashton
#
# Sum of hydrographs from Node 12 routed to Node 11
# (Approximated cross-section - see cross-section 258)
# Use n=0.04 for summer conditions and n=0.025 for spring conditions
#
# Sum of hydrographs from Node 12 routed to Node 11 with Dummy section 248
#
R0100:C00038------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->   1.0 02:S_N12       9506.00   21.745 No_date   32:41   34.08  n/a     .000
     [RDT= 1.00] out<-   1.0 01:Dum11       9506.00   21.522 No_date   32:57   34.08  n/a     .000
      [L/S/n=  972./ .054/.040]
      {Vmax=  .777:Dmax= 3.194}
#
# Addition of Subwatershed 11 and No Name Creek to Node 11
#
R0100:C00039------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              1.0 02:Dum11       9506.00   21.522 No_date   32:57   34.08  n/a     .000
                   +     1.0 02:SW_11        500.00   10.735 No_date   29:21   36.76  n/a     .000
                   +     1.0 02:NN_CK       1917.00   14.496 No_date   34:24   36.76  n/a     .000
                SUM=     1.0 01:S_N11      11923.00   38.138 No_date   32:59   34.62  n/a     .000
#
# Sum of hydrographs from Node 11 routed to Node 10
# Section 1
#
R0100:C00040------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->   1.0 02:S_N11      11923.00   38.138 No_date   32:59   34.62  n/a     .000
     [RDT= 1.00] out<-   1.0 01:N10        11923.00   23.609 No_date   39:19   34.62  n/a     .000
      [L/S/n=14028./ .157/.040]
      {Vmax=  .486:Dmax= 1.492}
#
# Addition of Subwatershed 10 to Node 10
#
R0100:C00041------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              1.0 02:N10        11923.00   23.609 No_date   39:19   34.62  n/a     .000
                   +     1.0 02:SW_10       5666.00   37.663 No_date   37:48   42.49  n/a     .000
                SUM=     1.0 01:S_N10      17589.00   61.058 No_date   38:16   37.16  n/a     .000
R0100:C00042------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD             1.0 01:S_N10      17589.00   61.058 No_date   38:16   37.16  n/a     .000
      fname :H_SN10
      remark:flow at S_N10: N10 + SW_10
# Addition of Kings Creek to S_N10
#
R0100:C00043------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              1.0 02:S_N10      17589.00   61.058 No_date   38:16   37.16  n/a     .000
                   +     1.0 02:KG_CK       8376.00   36.118 No_date   39:59   36.76  n/a     .000
                SUM=     1.0 01:S_N10A     25965.00   96.054 No_date   39:40   37.03  n/a     .000
#
# Sum of hydrographs from Node 10 routed to Node 9
# Section 2
#
R0100:C00044------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->   1.0 02:S_N10A     25965.00   96.054 No_date   39:40   37.03  n/a     .000
     [RDT= 1.00] out<-   1.0 01:N9         25965.00   94.262 No_date   39:59   37.03  n/a     .000
      [L/S/n= 3982./ .075/.040]
      {Vmax=  .775:Dmax= 2.151}
#
# Addition of Subwatershed 9 and Nichols Creek to Node 9
#
R0100:C00045------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              1.0 02:N9         25965.00   94.262 No_date   39:59   37.03  n/a     .000
                   +     1.0 02:SW_9        1132.00   16.501 No_date   30:52   40.83  n/a     .000
                   +     1.0 02:NC_CK       4464.00   18.060 No_date   39:59   33.61  n/a     .000
                SUM=     1.0 01:S_N9       31561.00  115.681 No_date   39:59   36.68  n/a     .000
#
# Sum of hydrographs from Node 9 routed to Node 8
# Section 3
#
R0100:C00046------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->   1.0 02:S_N9       31561.00  115.681 No_date   39:59   36.68  n/a     .000
     [RDT= 1.00] out<-   1.0 01:N8         31561.00  109.395 No_date   39:59   36.68  n/a     .000
      [L/S/n= 2269./ .088/.045]
      {Vmax=  .374:Dmax= 1.924}
#
# Addition of Subwatershed 8 and Hobb's Drain to Node 8
#
R0100:C00047------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              1.0 02:N8         31561.00  109.395 No_date   39:59   36.68  n/a     .000
                   +     1.0 02:SW_8         131.00    3.259 No_date   28:57   34.39  n/a     .000
                   +     1.0 02:HB_DR       3854.00   21.238 No_date   38:28   36.76  n/a     .000
                SUM=     1.0 01:S_N8       35546.00  130.593 No_date   39:59   36.68  n/a     .000
#
# Sum of hydrographs from Node 8 routed to Node 7
# Section 4
#
R0100:C00048------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->   1.0 02:S_N8       35546.00  130.593 No_date   39:59   36.68  n/a     .000
     [RDT= 1.00] out<-   1.0 01:N7         35546.00  111.942 No_date   44:52   36.68  n/a     .000
      [L/S/n= 3750./ .053/.070]
      {Vmax=  .237:Dmax= 2.412}
#
# Addition of Subwatershed 7 to Node 7
#
R0100:C00049------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              1.0 02:N7         35546.00  111.942 No_date   44:52   36.68  n/a     .000
                   +     1.0 02:SW_7        3197.00   16.421 No_date   36:21   29.79  n/a     .000
                SUM=     1.0 01:S_N7       38743.00  120.740 No_date   43:36   36.11  n/a     .000
R0100:C00050------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD             1.0 01:S_N7       38743.00  120.740 No_date   43:36   36.11  n/a     .000
      fname :H_SN7
      remark:flow at S_N7: N7 + SW_7
# Insertion of a reservoir to simulate the effects of the Richmond Fen.
# Storage area and volumes were estimated from available topo maps.
# Release rate from fen was assumed to be controlled by the downstream
# river cross-section for summer conditions.  It is was assumed that for up to
# 0.75 m of water, the main channel of the river provided the storage.  Above
# this depth, the wetland starts to signigicantly store water.
#
R0100:C00051------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->   1.0 02:S_N7       38743.00  120.740 No_date   43:36   36.11  n/a     .000
                out <=   1.0 01:RES_RF     38743.00   62.351 No_date   58:25   36.11  n/a     .000
     {MxStoUsed=.5140E+03  m3}
R0100:C00052------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD             1.0 01:RES_RF     38743.00   62.351 No_date   58:25   36.11  n/a     .000
      fname :H_ResRF
      remark:outflow of Richmond Fen
#
# Sum of hydrographs from Node 7 routed to Node 6
# Section 5
#
R0100:C00053------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->   1.0 02:RES_RF     38743.00   62.351 No_date   58:25   36.11  n/a     .000
     [RDT= 1.00] out<-   1.0 01:N6         38743.00   62.067 No_date   59:46   36.11  n/a     .000
      [L/S/n= 3056./ .082/.025]
      {Vmax=  .556:Dmax= 1.373}
#
# Addition of Subwatershed 6 and Van Gaal Drain to Node 6
#
R0100:C00054------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              1.0 02:N6         38743.00   62.067 No_date   59:46   36.11  n/a     .000
                   +     1.0 02:SW_6         165.00    1.511 No_date   33:01   37.57  n/a     .000
                   +     1.0 02:VG_DR       1332.00   10.882 No_date   35:10   42.49  n/a     .000
                SUM=     1.0 01:S_N6       40240.01   62.114 No_date   59:39   36.33  n/a     .000
#
# Sum of hydrographs from Node 6 routed to Node 5
# Section 6
#
R0100:C00055------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->   1.0 02:S_N6       40240.01   62.114 No_date   59:39   36.33  n/a     .000
     [RDT= 1.00] out<-   1.0 01:N5         40240.01   61.991 No_date   60:21   36.33  n/a     .000
      [L/S/n= 1852./ .054/.035]
      {Vmax=  .494:Dmax= 1.468}
#
# Addition of Subwatershed 5 and Flowing Creek to Node 5
#
R0100:C00056------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              1.0 02:N5         40240.01   61.991 No_date   60:21   36.33  n/a     .000
                   +     1.0 02:SW_5         224.00    9.576 No_date   28:44   47.62  n/a     .000
                   +     1.0 02:FL_CK       4945.00   52.056 No_date   33:16   44.17  n/a     .000
                SUM=     1.0 01:S_N5       45409.01   80.898 No_date   34:11   37.24  n/a     .000
#
# Sum of hydrographs from Node 5 routed to Node 5A
# Section 7
#
R0100:C00057------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->   1.0 02:S_N5       45409.01   80.898 No_date   34:11   37.24  n/a     .000
     [RDT= 1.00] out<-   1.0 01:N5A        45409.01   80.666 No_date   34:28   37.24  n/a     .000
      [L/S/n=  556./ .090/.040]
      {Vmax=  .546:Dmax= 1.353}
#
# Addition of Subwatershed 5A1 and Subwatershed 5A2 to Node 5A
#
R0100:C00058------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              1.0 02:N5A        45409.01   80.666 No_date   34:28   37.24  n/a     .000
                   +     1.0 02:SW_5A2        20.00    1.097 No_date   28:35   52.06  n/a     .000
                   +     1.0 02:SW_5A1      1412.00   10.184 No_date   37:44   45.88  n/a     .000
                SUM=     1.0 01:S_N5A      46841.01   89.756 No_date   34:38   37.51  n/a     .000
#
# Sum of hydrographs from Node 5A routed to Node 4
# Section 8
#
R0100:C00059------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->   1.0 02:S_N5A      46841.01   89.756 No_date   34:38   37.51  n/a     .000
     [RDT= 1.00] out<-   1.0 01:N4         46841.01   85.943 No_date   36:10   37.51  n/a     .000
      [L/S/n= 4630./ .043/.035]
      {Vmax=  .904:Dmax= 3.866}
#
# Addition of Subwatershed 4 and Leamy Creek to Node 4
#
R0100:C00060------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              1.0 02:N4         46841.01   85.943 No_date   36:10   37.51  n/a     .000
                   +     1.0 02:SW_4         585.00   14.953 No_date   29:55   52.06  n/a     .000
                   +     1.0 02:LM_CK       1021.00   19.782 No_date   30:45   51.16  n/a     .000
                SUM=     1.0 01:S_N4       48447.00   96.618 No_date   35:12   37.97  n/a     .000
R0100:C00061------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD             1.0 01:S_N4       48447.00   96.618 No_date   35:12   37.97  n/a     .000
      fname :S_N4.0100
      remark:flow at S_N4
#
# Sum of hydrographs from Node 4 routed to Node 2
# Section 9
#
R0100:C00062------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->   1.0 02:S_N4       48447.00   96.618 No_date   35:12   37.97  n/a     .000
     [RDT= 1.00] out<-   1.0 01:N2         48447.00   96.322 No_date   35:13   37.97  n/a     .000
      [L/S/n= 1667./ .060/.040]
      {Vmax=  .944:Dmax= 3.929}
#
# Addition of Subwatershed 2 with Monohan Drain and Smith Drain to Node 2
#
R0100:C00063------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              1.0 02:N2         48447.00   96.322 No_date   35:13   37.97  n/a     .000
                   +     1.0 02:SW_2         177.00    7.567 No_date   28:44   47.62  n/a     .000
                   +     1.0 02:SM_DR       1122.00   17.981 No_date   31:42   52.06  n/a     .000
                   +     1.0 02:MO_DR       2737.00   40.730 No_date   31:28   46.75  n/a     .000
                SUM=     1.0 01:S_N2       52483.00  143.580 No_date   32:59   38.76  n/a     .000
R0100:C00064------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD             1.0 01:S_N2       52483.00  143.580 No_date   32:59   38.76  n/a     .000
      fname :H_SN2
      remark:flow at S_N2 Jock River Gauge at Moodie Dr.
#
# Sum of hydrographs from Node 2 routed to Node 1
# Section 10
#
#*****************************************************************************
#
# Hydrograph from Node 2 routed to Node 416
# Channel X-Section obtained from RVCA Hydraulic Model - Station 9025
#
R0100:C00065------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->   1.0 02:S_N2       52483.00  143.580 No_date   32:59   38.76  n/a     .000
     [RDT= 1.00] out<-   1.0 01:N_416      52483.00  139.298 No_date   33:45   38.76  n/a     .000
      [L/S/n= 2327./ .050/.055]
      {Vmax=  .801:Dmax= 3.814}
#*****************************************************************************
#    Catchment SW-1a
#    - Portion of RVCA catchment SW_1 outside of Reach 1 subwatershed
#    - Undeveloped agricultural land
#*****************************************************************************
R0100:C00066------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    1.0 01:SW_1a        536.42    7.274 No_date   31:14   40.95 .462     .000
      [CN= 72.0: N= 3.00: Tp= 2.79]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
R0100:C00067------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD  1.0 01:S-1-Okeefe    44.93    7.977 No_date   28:02   70.58 .797     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 75.0]
      [Pervious    area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious  area: IAimp= 1.57:SLPI= .75:LGI= 547.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0100:C00068------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              1.0 02:N_416      52483.00  139.298 No_date   33:45   38.76  n/a     .000
                   +     1.0 02:SW_1a        536.42    7.274 No_date   31:14   40.95  n/a     .000
                   +     1.0 02:S-1-Okeefe    44.93    7.977 No_date   28:02   70.58  n/a     .000
                SUM=     1.0 01:SN_416     53064.36  144.978 No_date   33:31   38.81  n/a     .000
R0100:C00069------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD             1.0 01:SN_416     53064.36  144.978 No_date   33:31   38.81  n/a     .000
      fname :SN_416.0100
      remark:Total Flows at Highway 416
#
# Hydrograph from Node 416 routed to Node at Okeefe drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 7245
#
R0100:C00070------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->   1.0 02:SN_416     53064.36  144.978 No_date   33:31   38.81  n/a     .000
     [RDT= 1.00] out<-   1.0 01:N_OK       53064.36  144.828 No_date   33:30   38.81  n/a     .000
      [L/S/n=  497./ .302/.055]
      {Vmax= 1.728:Dmax= 3.267}
#*****************************************************************************
#    Catchment OKEEFE
#    - To O'Keefe drain (north of the Jock)
#    - Developed with assumed 43% imp.
#    - 2020-12-01 add Okeefe model (Area 513.02 HA) instead of current Okeefe (Area 513.02 HA)
#    - 2020-11-20 Okeefe detailed model was added as per the NOVATECH SWMHYMO model (Citi-Gate 2014).
#*****************************************************************************
R0100:C00071------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    1.0 01:O-1           63.72    1.380 No_date   28:58   30.74 .347     .000
      [CN= 61.0: N= 3.00: Tp=  .90]
      [IaREC= 4.00: SMIN= 64.50: SMAX=430.01: SK= .010]
      [InterEventTime=  12.00]
R0100:C00072------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->   1.0 02:O-1           63.72    1.380 No_date   28:58   30.74  n/a     .000
     [RDT= 1.00] out<-   1.0 01:O-1R          63.72    1.307 No_date   29:13   30.74  n/a     .000
      [L/S/n=  960./ .630/.043]
      {Vmax=  .926:Dmax=  .493}
R0100:C00073------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    1.0 01:O-2           28.61     .485 No_date   29:13   28.38 .320     .000
      [CN= 57.0: N= 3.00: Tp= 1.10]
      [IaREC= 4.00: SMIN= 76.32: SMAX=508.81: SK= .010]
      [InterEventTime=  12.00]
R0100:C00074------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    1.0 01:O-4           46.94     .650 No_date   28:59   21.79 .246     .000
      [CN= 49.0: N= 3.00: Tp=  .90]
      [IaREC= 4.00: SMIN=104.59: SMAX=697.25: SK= .010]
      [InterEventTime=  12.00]
R0100:C00075------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              1.0 02:O-1R          63.72    1.307 No_date   29:13   30.74  n/a     .000
                   +     1.0 02:O-2           28.61     .485 No_date   29:13   28.38  n/a     .000
                   +     1.0 02:O-4           46.94     .650 No_date   28:59   21.79  n/a     .000
                SUM=     1.0 01:OKF-N        139.27    2.427 No_date   29:10   27.24  n/a     .000
R0100:C00076------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->   1.0 02:OKF-N        139.27    2.427 No_date   29:10   27.24  n/a     .000
     [RDT= 1.00] out<-   1.0 01:OKF-NR       139.27    2.423 No_date   29:12   27.24  n/a     .000
      [L/S/n=  210./ .810/.043]
      {Vmax= 1.130:Dmax=  .796}
R0100:C00077------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD    1.0 01:O-6           16.46     .220 No_date   28:45   18.67 .211     .000
      [CN= 43.0: N= 3.00: Tp=  .70]
      [IaREC= 4.00: SMIN=134.47: SMAX=896.47: SK= .010]
      [InterEventTime=  12.00]
R0100:C00078------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD  1.0 01:O-3           39.67    1.454 No_date   28:21   32.90 .371     .000
      [XIMP=.15:TIMP=.30]
      [LOSS= 2 :CN= 50.0]
      [Pervious    area: IAper= 4.67:SLPP= .32:LGP= 440.:MNP=.035:SCP=   .0]
      [Impervious  area: IAimp= 1.57:SLPI= .32:LGI=1880.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 99.77: SMAX=665.12: SK= .010]
R0100:C00079------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD  1.0 01:O-5           60.63    3.669 No_date   28:10   38.00 .429     .000
      [XIMP=.13:TIMP=.26]
      [LOSS= 2 :CN= 61.0]
      [Pervious    area: IAper= 4.67:SLPP=1.38:LGP= 550.:MNP=.035:SCP=   .0]
      [Impervious  area: IAimp= 1.57:SLPI=1.38:LGI=1450.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 64.50: SMAX=430.01: SK= .010]
R0100:C00080------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              1.0 02:OKF-NR       139.27    2.423 No_date   29:12   27.24  n/a     .000
                   +     1.0 02:O-3           39.67    1.454 No_date   28:21   32.90  n/a     .000
                   +     1.0 02:O-5           60.63    3.669 No_date   28:10   38.00  n/a     .000
                   +     1.0 02:O-6           16.46     .220 No_date   28:45   18.67  n/a     .000
                SUM=     1.0 01:PT1          256.03    5.938 No_date   28:19   30.11  n/a     .000
```

```
R0100:C00081------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:O-7              5.28     .117 No_date   28:37   25.16 .284      .000
      [CN= 54.0: N= 3.00: Tp=  .60]
      [IaREC= 4.00: SMIN= 87.01: SMAX=580.07: SK= .010]
      [InterEventTime=  12.00]
R0100:C00082------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:PT1            256.03    5.938 No_date   28:19   30.11  n/a      .000
                    +     1.0 02:O-7              5.28     .117 No_date   28:37   25.16  n/a      .000
                 SUM=     1.0 01:FF             261.31    6.036 No_date   28:19   30.01  n/a      .000
R0100:C00083------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:FF             261.31    6.036 No_date   28:19   30.01  n/a      .000
     [RDT= 1.00] out<-    1.0 01:DRAIN1         261.31    5.843 No_date   28:23   30.01  n/a      .000
      [L/S/n=  302./1.000/.043]
      {Vmax=  .853:Dmax=  .797}
R0100:C00084------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:D1               1.17     .110 No_date   28:12   50.22 .567      .000
      [CN= 84.0: N= 3.00: Tp=  .28]
      [IaREC= 4.00: SMIN= 21.09: SMAX=140.62: SK= .010]
      [InterEventTime=  12.00]
R0100:C00085------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A1               2.50     .572 No_date   28:01   70.42 .795      .000
      [XIMP=.68:TIMP=.85]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 224.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00086------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:A1               2.50     .572 No_date   28:01   70.42  n/a      .000
                out <=    1.0 01:A1-STR           2.50     .173 No_date   28:17   70.42  n/a      .000
           overflow <=    1.0 03:A1-OVF            .00     .000 No_date    0:00     .00  n/a      .000
     {MxStoUsed=.7765E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00087------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:ST-2              .59     .115 No_date   28:00   55.78 .630      .000
      [XIMP=.46:TIMP=.57]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 109.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00088------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:ST-2              .59     .115 No_date   28:00   55.78  n/a      .000
                out <=    1.0 01:ST2STR            .59     .053 No_date   28:13   55.78  n/a      .000
           overflow <=    1.0 03:ST2OVF            .00     .000 No_date    0:00     .00  n/a      .000
     {MxStoUsed=.5215E-02  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00089------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:O-8             60.55    1.639 No_date   29:04   38.99 .440      .000
      [CN= 69.0: N= 3.00: Tp= 1.00]
      [IaREC= 4.00: SMIN= 44.82: SMAX=298.82: SK= .010]
      [InterEventTime=  12.00]
R0100:C00090------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:O-8             60.55    1.639 No_date   29:04   38.99  n/a      .000
     [RDT= 1.00] out<-    1.0 01:O8PIPE          60.55    1.631 No_date   29:07   38.99  n/a      .000
      [L/S/n=  335./ .100/.013]
      {Vmax= 1.305:Dmax=  .697}
      {HGTH= 1.20:WDTH= 1.80}
R0100:C00091------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:DRAIN1         261.31    5.843 No_date   28:23   30.01  n/a      .000
                    +     1.0 02:D1               1.17     .110 No_date   28:12   50.22  n/a      .000
                    +     1.0 02:A1-STR           2.50     .173 No_date   28:17   70.42  n/a      .000
                    +     1.0 02:A1-OVF            .00     .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:ST2STR            .59     .053 No_date   28:13   55.78  n/a      .000
                    +     1.0 02:ST2OVF            .00     .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:O8PIPE          60.55    1.631 No_date   29:07   38.99  n/a      .000
                 SUM=     1.0 01:ST2-IN         326.12    7.203 No_date   28:33   32.11  n/a      .000
R0100:C00092------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A7               3.51     .784 No_date   28:01   70.42 .795      .000
      [XIMP=.68:TIMP=.85]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 265.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00093------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:A7               3.51     .784 No_date   28:01   70.42  n/a      .000
                out <=    1.0 01:A7-STR           3.51     .240 No_date   28:18   70.42  n/a      .000
           overflow <=    1.0 03:A7-OVF            .00     .000 No_date    0:00     .00  n/a      .000
     {MxStoUsed=.1088E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00094------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:ST-3              .71     .138 No_date   28:00   55.78 .630      .000
      [XIMP=.46:TIMP=.57]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 119.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00095------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:ST-3              .71     .138 No_date   28:00   55.78  n/a      .000
                out <=    1.0 01:ST3STR            .71     .064 No_date   28:13   55.78  n/a      .000
           overflow <=    1.0 03:ST3OVF            .00     .000 No_date    0:00     .00  n/a      .000
     {MxStoUsed=.6043E-02  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00096------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:ST2-IN         326.12    7.203 No_date   28:33   32.11  n/a      .000
                    +     1.0 02:A7-STR           3.51     .240 No_date   28:18   70.42  n/a      .000
                    +     1.0 02:A7-OVF            .00     .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:ST3STR            .71     .064 No_date   28:13   55.78  n/a      .000
                    +     1.0 02:ST3OVF            .00     .000 No_date    0:00     .00  n/a      .000
                 SUM=     1.0 01:PT2ST3         330.34    7.487 No_date   28:31   32.57  n/a      .000
R0100:C00097------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:PT2ST3         330.34    7.487 No_date   28:31   32.57  n/a      .000
     [RDT= 1.00] out<-    1.0 01:DRAIN2         330.34    6.868 No_date   28:55   32.57  n/a      .000
      [L/S/n=  592./ .230/.043]
      {Vmax=  .611:Dmax= 1.215}
R0100:C00098------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:D2               2.28     .087 No_date   29:02   50.22 .567      .000
      [CN= 84.0: N= 3.00: Tp=  .99]
      [IaREC= 4.00: SMIN= 21.09: SMAX=140.62: SK= .010]
      [InterEventTime=  12.00]
R0100:C00099------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A17             12.04    2.382 No_date   28:03   70.42 .795      .000
      [XIMP=.68:TIMP=.85]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 491.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00100------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:A17             12.04    2.382 No_date   28:03   70.42  n/a      .000
                out <=    1.0 01:A17STR          12.04     .801 No_date   28:24   70.42  n/a      .000
           overflow <=    1.0 03:A17OVF            .00     .000 No_date    0:00     .00  n/a      .000
     {MxStoUsed=.3671E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00101------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:ST-4              .35     .069 No_date   28:00   55.78 .630      .000
      [XIMP=.46:TIMP=.57]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=  84.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00102------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:ST-4              .35     .069 No_date   28:00   55.78  n/a      .000
                out <=    1.0 01:ST4STR            .35     .032 No_date   28:13   55.78  n/a      .000
           overflow <=    1.0 03:ST4OVF            .00     .000 No_date    0:00     .00  n/a      .000
     {MxStoUsed=.3372E-02  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00103------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A18              5.30    1.139 No_date   28:01   70.42 .795      .000
      [XIMP=.68:TIMP=.85]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 326.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00104------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:A18              5.30    1.139 No_date   28:01   70.42  n/a      .000
                out <=    1.0 01:A18STR           5.30     .360 No_date   28:20   70.42  n/a      .000
           overflow <=    1.0 03:A18OVF            .00     .000 No_date    0:00     .00  n/a      .000
     {MxStoUsed=.1636E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00105------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:DRAIN2         330.34    6.868 No_date   28:55   32.57  n/a      .000
                    +     1.0 02:D2               2.28     .087 No_date   29:02   50.22  n/a      .000
                    +     1.0 02:A17STR          12.04     .801 No_date   28:24   70.42  n/a      .000
                    +     1.0 02:A17OVF            .00     .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:ST4STR            .35     .032 No_date   28:13   55.78  n/a      .000
                    +     1.0 02:ST4OVF            .00     .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:A18STR           5.30     .360 No_date   28:20   70.42  n/a      .000
                    +     1.0 02:A18OVF            .00     .000 No_date    0:00     .00  n/a      .000
                 SUM=     1.0 01:PT3ST4         350.31    7.785 No_date   28:52   34.58  n/a      .000
R0100:C00106------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:PT3ST4         350.31    7.785 No_date   28:52   34.58  n/a      .000
     [RDT= 1.00] out<-    1.0 01:DRAIN3         350.31    7.474 No_date   29:08   34.58  n/a      .000
      [L/S/n=  525./ .230/.043]
      {Vmax=  .628:Dmax= 1.257}
R0100:C00107------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:D3               2.51     .132 No_date   28:43   54.04 .610      .000
      [CN= 86.0: N= 3.00: Tp=  .73]
      [IaREC= 4.00: SMIN= 17.43: SMAX=116.21: SK= .010]
      [InterEventTime=  12.00]
R0100:C00108------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:C1               3.41     .763 No_date   28:01   70.42 .795      .000
      [XIMP=.68:TIMP=.85]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 261.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00109------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:C1               3.41     .763 No_date   28:01   70.42  n/a      .000
                out <=    1.0 01:C1-STR           3.41     .232 No_date   28:18   70.42  n/a      .000
           overflow <=    1.0 03:C1-OVF            .00     .000 No_date    0:00     .00  n/a      .000
     {MxStoUsed=.1056E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00110------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:ST-5              .45     .088 No_date   28:00   55.78 .630      .000
      [XIMP=.46:TIMP=.57]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=  95.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00111------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:ST-5              .45     .088 No_date   28:00   55.78  n/a      .000
                out <=    1.0 01:ST5STR            .45     .041 No_date   28:13   55.78  n/a      .000
           overflow <=    1.0 03:ST5OVF            .00     .000 No_date    0:00     .00  n/a      .000
     {MxStoUsed=.4111E-02  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00112------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:DRAIN3         350.31    7.474 No_date   29:08   34.58  n/a      .000
                    +     1.0 02:D3               2.51     .132 No_date   28:43   54.04  n/a      .000
                    +     1.0 02:C1-STR           3.41     .232 No_date   28:18   70.42  n/a      .000
                    +     1.0 02:C1-OVF            .00     .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:ST5STR            .45     .041 No_date   28:13   55.78  n/a      .000
                    +     1.0 02:ST5OVF            .00     .000 No_date    0:00     .00  n/a      .000
                 SUM=     1.0 01:ST5-E          356.68    7.731 No_date   29:07   35.08  n/a      .000
R0100:C00113------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:STRAND           7.59    1.163 No_date   28:08   68.85 .777      .000
      [XIMP=.64:TIMP=.85]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1230.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00114------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:STRAND           7.59    1.163 No_date   28:08   68.85  n/a      .000
                out <=    1.0 01:S-POND           7.59     .200 No_date   29:01   68.85  n/a      .000
           overflow <=    1.0 03:S-OVF             .00     .000 No_date    0:00     .00  n/a      .000
     {MxStoUsed=.3382E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00115------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:ST5-E          356.68    7.731 No_date   29:07   35.08  n/a      .000
                    +     1.0 02:S-POND           7.59     .200 No_date   29:01   68.85  n/a      .000
                    +     1.0 02:S-OVF             .00     .000 No_date    0:00     .00  n/a      .000
                 SUM=     1.0 01:SSAOUT         364.27    7.924 No_date   29:06   35.79  n/a      .000
R0100:C00116------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SSAOUT         364.27    7.924 No_date   29:06   35.79  n/a      .000
      fname :SSAOUT.0100
      remark:SSAOUT
R0100:C00117------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:Area-A          66.75    9.945 No_date   28:08   67.64 .764      .000
      [XIMP=.64:TIMP=.80]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1155.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00118------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:Area-A          66.75    9.945 No_date   28:08   67.64  n/a      .000
      fname :Area-A.0100
      remark:SMWF-A Inflow
R0100:C00119------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:Area-A          66.75    9.945 No_date   28:08   67.64  n/a      .000
                out <=    1.0 01:SWMF-A          66.75    1.357 No_date   29:10   67.64  n/a      .000
           overflow <=    1.0 03:SWMAOV            .00     .000 No_date    0:00     .00  n/a      .000
     {MxStoUsed=.3051E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00120------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SWMF-A          66.75    1.357 No_date   29:10   67.64  n/a      .000
      fname :SWMF-A.0100
      remark:SMWF-A Outflow
R0100:C00121------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:SSAOUT         364.27    7.924 No_date   29:06   35.79  n/a      .000
                    +     1.0 02:SWMF-A          66.75    1.357 No_date   29:10   67.64  n/a      .000
                    +     1.0 02:SWMAOV            .00     .000 No_date    0:00     .00  n/a      .000
                 SUM=     1.0 01:PT4ST5         431.02    9.279 No_date   29:07   40.72  n/a      .000
R0100:C00122------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:C6               1.87     .433 No_date   28:01   70.42 .795      .000
      [XIMP=.68:TIMP=.85]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 193.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00123------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:C6               1.87     .433 No_date   28:01   70.42  n/a      .000
                out <=    1.0 01:C6-STR           1.87     .129 No_date   28:16   70.42  n/a      .000
           overflow <=    1.0 03:C6-OVF            .00     .000 No_date    0:00     .00  n/a      .000
     {MxStoUsed=.5845E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00124------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:C7               1.62     .381 No_date   28:00   70.42 .795      .000
      [XIMP=.68:TIMP=.85]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 180.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00125------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:C7               1.62     .381 No_date   28:00   70.42  n/a      .000
                out <=    1.0 01:C7-STR           1.62     .112 No_date   28:16   70.42  n/a      .000
           overflow <=    1.0 03:C7-OVF            .00     .000 No_date    0:00     .00  n/a      .000
     {MxStoUsed=.5036E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00126------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:ST-6              .41     .081 No_date   28:00   55.78 .630      .000
      [XIMP=.46:TIMP=.57]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=  91.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00127------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:ST-6              .41     .081 No_date   28:00   55.78  n/a      .000
                out <=    1.0 01:ST6STR            .41     .037 No_date   28:13   55.78  n/a      .000
           overflow <=    1.0 03:ST6OVF            .00     .000 No_date    0:00     .00  n/a      .000
     {MxStoUsed=.3877E-02  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00128------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:PT4ST5         431.02    9.279 No_date   29:07   40.72  n/a      .000
                    +     1.0 02:C6-STR           1.87     .129 No_date   28:16   70.42  n/a      .000
                    +     1.0 02:C6-OVF            .00     .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:C7-STR           1.62     .112 No_date   28:16   70.42  n/a      .000
                    +     1.0 02:C7-OVF            .00     .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:ST6STR            .41     .037 No_date   28:13   55.78  n/a      .000
                    +     1.0 02:ST6OVF            .00     .000 No_date    0:00     .00  n/a      .000
                 SUM=     1.0 01:PT5ST6         434.92    9.426 No_date   29:06   40.97  n/a      .000
R0100:C00129------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:PT5ST6         434.92    9.426 No_date   29:06   40.97  n/a      .000
     [RDT= 1.00] out<-    1.0 01:DRAIN4         434.92    9.061 No_date   29:16   40.97  n/a      .000
      [L/S/n=  324./ .100/.043]
      {Vmax=  .507:Dmax= 1.619}
R0100:C00130------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:D4               1.73     .112 No_date   28:33   57.07 .644      .000
      [CN= 88.0: N= 3.00: Tp=  .60]
      [IaREC= 4.00: SMIN= 14.94: SMAX= 99.61: SK= .010]
      [InterEventTime=  12.00]
R0100:C00131------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:Area-B          24.04    4.871 No_date   28:02   66.17 .747      .000
      [XIMP=.62:TIMP=.77]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=1.40:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.40:LGI= 693.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00132------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:Area-B          24.04    4.871 No_date   28:02   66.17  n/a      .000
                out <=    1.0 01:SWMF-B          24.04     .641 No_date   28:41   66.17  n/a      .000
           overflow <=    1.0 03:SWMBOVF           .00     .000 No_date    0:00     .00  n/a      .000
     {MxStoUsed=.9727E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00133------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:DRAIN4         434.92    9.061 No_date   29:16   40.97  n/a      .000
                    +     1.0 02:D4               1.73     .112 No_date   28:33   57.07  n/a      .000
                    +     1.0 02:SWMF-B          24.04     .641 No_date   28:41   66.17  n/a      .000
                    +     1.0 02:SWMBOVF           .00     .000 No_date    0:00     .00  n/a      .000
                 SUM=     1.0 01:D4-EX          460.69    9.722 No_date   29:15   42.35  n/a      .000
R0100:C00134------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:D4-EX          460.69    9.722 No_date   29:15   42.35  n/a      .000
     [RDT= 1.00] out<-    1.0 01:DRAIN5         460.69    9.564 No_date   29:26   42.35  n/a      .000
      [L/S/n=  413./ .160/.033]
      {Vmax=  .703:Dmax= 1.106}
R0100:C00135------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:D5               1.90     .104 No_date   28:40   54.04 .610      .000
      [CN= 86.0: N= 3.00: Tp=  .69]
      [IaREC= 4.00: SMIN= 17.43: SMAX=116.21: SK= .010]
      [InterEventTime=  12.00]
R0100:C00136------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:O-13SDF          9.74     .675 No_date   28:21   50.83 .574      .000
      [CN= 81.0: N= 3.00: Tp=  .43]
      [IaREC= 4.00: SMIN= 25.21: SMAX=168.09: SK= .010]
      [InterEventTime=  12.00]
R0100:C00137------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:O-13SDF          9.74     .675 No_date   28:21   50.83  n/a      .000
                out <=    1.0 01:SDF              9.74     .070 No_date   30:50   50.83  n/a      .000
           overflow <=    1.0 03:OVFSDF            .00     .000 No_date    0:00     .00  n/a      .000
     {MxStoUsed=.2813E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00138------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:DRAIN5         460.69    9.564 No_date   29:26   42.35  n/a      .000
                    +     1.0 02:D5               1.90     .104 No_date   28:40   54.04  n/a      .000
                    +     1.0 02:SDF              9.74     .070 No_date   30:50   50.83  n/a      .000
                 SUM=     1.0 01:PT6MC          472.33    9.694 No_date   29:26   42.57  n/a      .000
R0100:C00139------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:O-15            10.67     .940 No_date   28:13   49.72 .561      .000
      [CN= 82.0: N= 3.00: Tp=  .30]
      [IaREC= 4.00: SMIN= 23.09: SMAX=153.94: SK= .010]
      [InterEventTime=  12.00]
R0100:C00140------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:PT6MC          472.33    9.694 No_date   29:26   42.57  n/a      .000
                    +     1.0 02:O-15            10.67     .940 No_date   28:13   49.72  n/a      .000
                 SUM=     1.0 01:M-C            483.00    9.844 No_date   29:26   42.73  n/a      .000
R0100:C00141------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:M-C            483.00    9.844 No_date   29:26   42.73  n/a      .000
     [RDT= 1.00] out<-    1.0 01:O-14Ch         483.00    8.880 No_date   29:52   42.73  n/a      .000
      [L/S/n=  845./ .100/.033]
      {Vmax=  .556:Dmax= 1.861}
R0100:C00142------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:O-14             5.00     .722 No_date   28:04   49.72 .561      .000
      [CN= 82.0: N= 3.00: Tp=  .13]
      [IaREC= 4.00: SMIN= 23.09: SMAX=153.94: SK= .010]
      [InterEventTime=  12.00]
R0100:C00143------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:O-14Ch         483.00    8.880 No_date   29:52   42.73  n/a      .000
                    +     1.0 02:O-14             5.00     .722 No_date   28:04   49.72  n/a      .000
                 SUM=     1.0 01:OKEEFE         488.00    8.925 No_date   29:52   42.80  n/a      .000
#*****************************************************************************
#    Okeefe Pond
#    - Rating curve obtained assuming 40m3/ha in 24 hours for quality control
#      and a ratio of the catchment area to the West Clarke pond rating curve
#      from the MSS for the next coordinates
#*****************************************************************************
R0100:C00144------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-D2          18.67    3.580 No_date   28:01   70.58 .797      .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .75:LGI= 353.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0100:C00145------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
```

```
    CONTINUOUS STANDHYD   1.0 01:S-1-D3         6.79    1.405 No_date   28:00   70.58 .797     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .75:LGI= 213.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0100:C00146------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N_OK       53064.36  144.828 No_date   33:30   38.81  n/a     .000
                    +     1.0 02:OKEEFE       488.00    8.925 No_date   29:52   42.80  n/a     .000
                    +     1.0 02:S-1-D2        18.67    3.580 No_date   28:01   70.58  n/a     .000
                    +     1.0 02:S-1-D3         6.79    1.405 No_date   28:00   70.58  n/a     .000
                 SUM=     1.0 01:SN_OK      53577.82  147.873 No_date   33:30   38.86  n/a     .000
R0100:C00147------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_OK      53577.82  147.873 No_date   33:30   38.86  n/a     .000
      fname :SN_OK.0100
      remark:Total Flows at Okeefe Drain
#
# Hydrograph from Node Okeefe routed to Node at Foster Drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 6215
#
R0100:C00148------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_OK      53577.82  147.873 No_date   33:30   38.86  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N_FO       53577.82  147.535 No_date   33:30   38.86  n/a     .000
      [L/S/n= 1183./ .076/.035]
      {Vmax= 1.294:Dmax= 3.586}
#*******************************************************************************
#    Catchment FOSTER
#    - To Foster ditch (north of the Jock)
#    - Partially developed (medium density); remaining agricultural
#    - 2020-12-01 JFSA Foster area is 332 as per Foster SWMF Environmental Study Report, CH2MHILL, Aug 2013.
#    - 2020-12-01 decrease Foster drainage area from (373 HA) to (307.98 HA) after increasing Okeefe drainage area to (5
#    - 2021-02-12  update Foster area to 325.44 ha as measured from QGIS
#*******************************************************************************
R0100:C00149------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:FOSTER       325.44   36.526 No_date   28:10   65.13 .735     .000
      [XIMP=.55:TIMP=.55]
      [LOSS= 2 :CN= 74.0]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1473.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 36.67: SMAX=244.49: SK= .010]
#*******************************************************************************
#    Foster Pond
#    - Rating curve obtained assuming 40m3/ha in 24 hours for quality control
#      and a ratio of the catchment area to the West Clarke pond rating curve
#      from the MSS for the next coordinates
#*******************************************************************************
R0100:C00150------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:FOSTER       325.44   36.526 No_date   28:10   65.13  n/a     .000
                out <=    1.0 01:P_FOS        325.44    9.091 No_date   29:01   65.13  n/a     .000
           overflow <=    1.0 03:FO-OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.8792E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00151------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:P_FOS        325.44    9.091 No_date   29:01   65.13  n/a     .000
                    +     1.0 02:FO-OVF          .00     .000 No_date    0:00     .00  n/a     .000
                 SUM=     1.0 01:FOSTER-OUT   325.44    9.091 No_date   29:01   65.13  n/a     .000
#*******************************************************************************
R0100:C00152------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:W_CLAR_BRA    73.29   11.683 No_date   28:05   70.23 .793     .000
      [XIMP=.60:TIMP=.65]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 699.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0100:C00153------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:W_CLAR_BRA    73.29   11.683 No_date   28:05   70.23  n/a     .000
                out <=    1.0 01:MS_P10        73.29    1.240 No_date   29:12   70.23  n/a     .000
           overflow <=    1.0 03:P10-OVF         .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.2223E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00154------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-FO-D2      4.94     .896 No_date   28:00   65.13 .735     .000
      [XIMP=.55:TIMP=.55]
      [LOSS= 2 :CN= 74.0]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 181.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 36.67: SMAX=244.49: SK= .010]
R0100:C00155------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:FOSTER-OUT   325.44    9.091 No_date   29:01   65.13  n/a     .000
                    +     1.0 02:S-1-FO-D2      4.94     .896 No_date   28:00   65.13  n/a     .000
                 SUM=     1.0 01:980          330.38    9.176 No_date   29:00   65.13  n/a     .000
R0100:C00156------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:980          330.38    9.176 No_date   29:00   65.13  n/a     .000
      fname :980.0100
      remark:Total Flows at Station 980 on Foster Drain
#
# Hydrograph from Node Foster SWM (Station 980)to Node at station 520
# Channel X-Section obtained from RVCA Hydraulic Model - Station 980
#
R0100:C00157------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:980          330.38    9.176 No_date   29:00   65.13  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:980-out      330.38    8.694 No_date   29:39   65.13  n/a     .000
      [L/S/n=  460./ .043/.035]
      {Vmax=  .538:Dmax= 1.670}
R0100:C00158------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-FO-D1      5.11    1.040 No_date   28:00   69.99 .790     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 74.0]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 185.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 36.67: SMAX=244.49: SK= .010]
R0100:C00159------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:980-out      330.38    8.694 No_date   29:39   65.13  n/a     .000
                    +     1.0 02:S-1-FO-D1      5.11    1.040 No_date   28:00   69.99  n/a     .000
                 SUM=     1.0 01:520          335.49    8.749 No_date   29:17   65.20  n/a     .000
R0100:C00160------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:520          335.49    8.749 No_date   29:17   65.20  n/a     .000
      fname :520.0100
      remark:Total Flows at Sation 520 on Foster Drain
# Hydrograph from Node at Station 520 (Foster Drain) to Node at station 6016 (Jock River)
# Channel X-Section obtained from RVCA Hydraulic Model - Station 520
#
R0100:C00161------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:520          335.49    8.749 No_date   29:17   65.20  n/a     .000
     [RDT= 1.00] out<-    1.0 01:520-out      335.49    8.704 No_date   29:40   65.20  n/a     .000
      [L/S/n=  860./ .587/.035]
      {Vmax= 1.596:Dmax=  .801}
R0100:C00162------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-FO-F-D    14.96    2.819 No_date   28:01   69.99 .790     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 74.0]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 316.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 36.67: SMAX=244.49: SK= .010]
R0100:C00163------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-D8         5.27    1.181 No_date   28:01   51.48 .581     .000
      [XIMP=.32:TIMP=.65]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI= .75:LGI= 187.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00164------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:S-1-A         75.88    3.578 No_date   28:36   45.95 .519     .000
      [CN= 77.0: N= 3.00: Tp=  .62]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0100:C00165------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:W_CLAR_UND    35.65    1.108 No_date   29:10   45.95 .519     .000
      [CN= 77.0: N= 3.00: Tp= 1.10]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0100:C00166------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N_FO       53577.82  147.535 No_date   33:30   38.86  n/a     .000
                    +     1.0 02:520-out      335.49    8.704 No_date   29:40   65.20  n/a     .000
                    +     1.0 02:MS_P10        73.29    1.240 No_date   29:12   70.23  n/a     .000
                    +     1.0 02:P10-OVF         .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:W_CLAR_UND    35.65    1.108 No_date   29:10   45.95  n/a     .000
                    +     1.0 02:S-1-FO-F-D    14.96    2.819 No_date   28:01   69.99  n/a     .000
                    +     1.0 02:S-1-D8         5.27    1.181 No_date   28:01   51.48  n/a     .000
                    +     1.0 02:S-1-A         75.88    3.578 No_date   28:36   45.95  n/a     .000
                 SUM=     1.0 01:SN_FO      54118.36  153.186 No_date   33:05   39.09  n/a     .000
R0100:C00167------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_FO      54118.36  153.186 No_date   33:05   39.09  n/a     .000
      fname :SN_FO.0100
      remark:Total Flows at Foster Drain
# Hydrograph from Node Foster routed to Node at Cedarview Road
# Channel X-Section obtained from RVCA Hydraulic Model - Station 6016
#
R0100:C00168------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_FO      54118.36  153.186 No_date   33:05   39.09  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:N_CE       54118.36  152.906 No_date   33:31   39.09  n/a     .000
      [L/S/n=  159./ .082/.035]
      {Vmax= 1.455:Dmax= 4.470}
#*******************************************************************************
#    Catchment S-1
#    - To Jock River (north and south of Jock)
#    - Primarily agricultural fields; portion of sand quarry
#*******************************************************************************
R0100:C00169------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:S-1-B         55.36    3.260 No_date   28:23   45.95 .519     .000
      [CN= 77.0: N= 3.00: Tp=  .45]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
#    -  JFSA 2021-02-24 change the name from S-1-BCDC to S-1-A and S-1-B. Change their TP values based on the new areas
#    -  JFSA 2021-02-24 "S-1-BCDC-1" and "S-1-BCDC-2" are not existing anymore. "S-1-BCDC-1" is part of "S-1-FO-D2" and
#    -  JFSA 2021-01-19, after adding Greenbank pond, "S-1-BCDC-3" is not existing anymore
R0100:C00170------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-D1        21.67    4.117 No_date   28:01   70.58 .797     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .75:LGI= 380.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0100:C00171------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-D4         3.28     .705 No_date   28:00   70.58 .797     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .75:LGI= 148.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0100:C00172------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-D5        12.84    2.544 No_date   28:01   70.58 .797     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .75:LGI= 293.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0100:C00173------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-D6         1.75     .382 No_date   28:00   70.58 .797     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .75:LGI= 108.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0100:C00174------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-D7         2.03     .442 No_date   28:00   70.58 .797     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .75:LGI= 116.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
#    Catchment W_CLAR
#    - To West Clarke Drain (south of the Jock)
#    - Subdivision with 43% imp. as per Barrhaven South MSS
#    - 2020-11-30 update CLARKE Tributary Drainage Area to  = 121 ha based on P598(04)-11
#    - 2020-11-30 split CLARKE Drainage Area to MAJOR and ALL
#*******************************************************************************
R0100:C00175------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:W_CLAR_MJ      1.77     .332 No_date   28:00   66.20 .747     .000
      [XIMP=.46:TIMP=.59]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 109.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
# 5-Year + 12% Capture
R0100:C00176------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:W_CLAR_MJ      1.77     .332 No_date   28:00   66.20  n/a     .000
                out <=    1.0 01:W_CLAR_MJn     1.69     .213 No_date   27:52   66.22  n/a     .000
           overflow <=    1.0 03:W_CLAR_MJj      .08     .115 No_date   28:01   66.20  n/a     .000
     {MxStoUsed=.1530E-03  m3, TotOvfVol=.5337E-02  m3, N-Ovf=    1, TotDurOvf=    0.hrs}
R0100:C00177------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:W_CLAR_ALL   119.40   19.638 No_date   28:04   70.23 .793     .000
      [XIMP=.60:TIMP=.65]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 892.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0100:C00178------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:W_CLAR_ALL   119.40   19.638 No_date   28:04   70.23  n/a     .000
                    +     1.0 02:W_CLAR_MJj      .08     .115 No_date   28:01   66.20  n/a     .000
                 SUM=     1.0 01:W_CLAR       119.48   19.657 No_date   28:04   70.22  n/a     .000
R0100:C00179------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:W_CLAR       119.48   19.657 No_date   28:04   70.22  n/a     .000
      fname :W_CLAR.0100
      remark:Total Flows to West Clarke
#*******************************************************************************
#    West Clarke Pond 2
#    - Rating curve obtained from Barrhaven South MSS modeling
#    - Tributary Drainage Area to MSS Pond 2 = 241 ha
#*******************************************************************************
R0100:C00180------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:W_CLAR       119.48   19.657 No_date   28:04   70.22  n/a     .000
                out <=    1.0 01:MS_P2        119.48   13.064 No_date   28:13   70.22  n/a     .000
           overflow <=    1.0 03:P2-OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.3189E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
#*******************************************************************************
R0100:C00181------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N_CE       54118.36  152.906 No_date   33:31   39.09  n/a     .000
                    +     1.0 02:S-1-D4         3.28     .705 No_date   28:00   70.58  n/a     .000
                    +     1.0 02:S-1-D5        12.84    2.544 No_date   28:01   70.58  n/a     .000
                    +     1.0 02:MS_P2        119.48   13.064 No_date   28:13   70.22  n/a     .000
                    +     1.0 02:P2-OVF          .00     .000 No_date    0:00     .00  n/a     .000
                 SUM=     1.0 01:SN_CE      54253.96  153.868 No_date   33:31   39.17  n/a     .000
R0100:C00182------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_CE      54253.96  153.868 No_date   33:31   39.17  n/a     .000
      fname :SN_CE.0100
      remark:Total Flows before Station 5737 on Jock River
# Channel X-Section obtained from RVCA Hydraulic Model - Station 5737
# 2021-02-25 add station 5737 before station 5002. Station 5737 was extracted from the HEC-RAS model T:\PROJ\1474-16\Des
# JFSA 2021-03-02  change the slope to 0.0175% instead of 0.02593 to stabilize the model
R0100:C00183------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_CE      54253.96  153.868 No_date   33:31   39.17  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:5737       54253.96  144.122 No_date   35:48   39.17  n/a     .000
      [L/S/n=  270./ .018/.035]
      {Vmax=  .871:Dmax= 5.567}
R0100:C00184------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:5737       54253.96  144.122 No_date   35:48   39.17  n/a     .000
                    +     1.0 02:S-1-D1        21.67    4.117 No_date   28:01   70.58  n/a     .000
                    +     1.0 02:S-1-D6         1.75     .382 No_date   28:00   70.58  n/a     .000
                    +     1.0 02:S-1-D7         2.03     .442 No_date   28:00   70.58  n/a     .000
                 SUM=     1.0 01:5002       54279.41  144.226 No_date   35:48   39.18  n/a     .000
R0100:C00185------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:5002       54279.41  144.226 No_date   35:48   39.18  n/a     .000
      fname :5002.0100
      remark:Total Flows before Station 5002 on Jock River
# Hydrograph from Node Cedarview Road routed to Node at West Clarke Drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 5002
# JFSA 2021-02-19 Change the slope from 0.01 % (as per Stantec Report 2007) to 0.0255 % so the model will be more stable
# JFSA 2021-02-19 Change to three ROUTE CHANNEL with length 275 m each instead of one with 825 m length so the model wil
# JFSA 2021-02-26 change the length of 5002 route channel from 825 m to 736 m. That is because of adding station 5737 be
R0100:C00186------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:5002       54279.41  144.226 No_date   35:48   39.18  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:N_WCa      54279.41  144.212 No_date   35:53   39.19  n/a     .000
      [L/S/n=  245./ .095/.035]
      {Vmax= 1.317:Dmax= 3.143}
R0100:C00187------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:N_WCa      54279.41  144.212 No_date   35:53   39.19  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:N_WCb      54279.41  144.188 No_date   36:00   39.19  n/a     .000
      [L/S/n=  245./ .095/.035]
      {Vmax= 1.317:Dmax= 3.143}
R0100:C00188------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:N_WCb      54279.41  144.188 No_date   36:00   39.19  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:N_WC       54279.41  144.176 No_date   36:05   39.19  n/a     .000
      [L/S/n=  245./ .095/.035]
      {Vmax= 1.317:Dmax= 3.143}
#*******************************************************************************
# Hydrograph from Node West Clarke routed to Node at Kennedy - Burnett Drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 4534
#
R0100:C00189------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:N_WC       54279.41  144.176 No_date   36:05   39.19  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:N_KB       54279.41  143.629 No_date   36:32   39.19  n/a     .000
      [L/S/n= 1020./ .050/.035]
      {Vmax= 1.006:Dmax= 3.865}
#*******************************************************************************
#    Catchment KEN_BU
#    - To Kennedy-Burnett SWM Facility
#    - Outlets to Fraser-Clarke drain (north of the Jock)
#    - Medium density residential subdivision
#*******************************************************************************
#*******************************************************************************
#   Existing Kennedy-Burnett SWM Facility
#    - Rating curve obtained from URTKBP
#    - Tributary Drainage Area to Pond = 160 ha
#*******************************************************************************
R0100:C00190------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-01A        40.82    5.490 No_date   28:09   36.71 .415     .000
      [XIMP=.10:TIMP=.40]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI= .50:LGI= 522.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00191------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-01A        40.82    5.490 No_date   28:09   36.71  n/a     .000
     Major System   /     1.0 02:KB-01A-MJ       .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-01A-MN     40.82    3.600 No_date   28:44   36.91  n/a     .000
      {MjSysSto=.1774E+04, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00192------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-01A-MJ       .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:KB-01A-MN     40.82    3.600 No_date   28:44   36.91  n/a     .000
                 SUM=     1.0 01:KB-01A-S      40.82    3.600 No_date   28:44   36.91  n/a     .000
R0100:C00193------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-01B        31.10    4.072 No_date   28:06   40.61 .458     .000
      [XIMP=.19:TIMP=.38]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .42:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI= .42:LGI= 455.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00194------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-01B        31.10    4.072 No_date   28:06   40.61  n/a     .000
     Major System   /     1.0 02:KB-01B-MJ       .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-01B-MN     31.10    1.585 No_date   27:51   40.77  n/a     .000
      {MjSysSto=.3465E+04, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00195------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-01B-MJ       .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:KB-01B-MN     31.10    1.585 No_date   27:51   40.77  n/a     .000
                 SUM=     1.0 01:KB-01B-S      31.10    1.585 No_date   27:51   40.77  n/a     .000
R0100:C00196------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-01C        13.78    2.471 No_date   28:03   41.89 .473     .000
      [XIMP=.20:TIMP=.41]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI= .50:LGI= 303.:MNI=.013:SCI=   .0]
```

```
       [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00197------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-01C        13.78    2.471 No_date   28:03   41.89  n/a      .000
     Major System   /     1.0 02:KB-01C-MJ       .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:KB-01C-MN     13.78    1.350 No_date   28:37   42.09  n/a      .000
      {MjSysSto=.8650E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00198------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-01C-MJ       .00     .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:KB-01C-MN     13.78    1.350 No_date   28:37   42.09  n/a      .000
                 SUM=     1.0 01:KB-01C-S      13.78    1.350 No_date   28:37   42.09  n/a      .000
R0100:C00199------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-03         84.78   12.777 No_date   28:07   41.33 .467      .000
      [XIMP=.20:TIMP=.39]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI= .63:LGI= 752.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00200------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-03         84.78   12.777 No_date   28:07   41.33  n/a      .000
     Major System   /     1.0 02:KB-03-MJ        .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:KB-03-MN      84.78    5.270 No_date   29:11   41.33  n/a      .000
      {MjSysSto=.8591E+04, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00201------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-03-MJ        .00     .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:KB-03-MN      84.78    5.270 No_date   29:11   41.33  n/a      .000
                 SUM=     1.0 01:KB-03-S       84.78    5.270 No_date   29:11   41.33  n/a      .000
R0100:C00202------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-04          6.95    1.754 No_date   28:00   78.30 .884      .000
      [XIMP=.85:TIMP=.85]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .94:SLPI= .50:LGI= 215.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00203------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-04          6.95    1.754 No_date   28:00   78.30  n/a      .000
     Major System   /     1.0 02:KB-04-MJ        .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:KB-04-MN       6.95     .503 No_date   27:43   78.64  n/a      .000
      {MjSysSto=.1121E+04, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00204------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-04-MJ        .00     .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:KB-04-MN       6.95     .503 No_date   27:43   78.64  n/a      .000
                 SUM=     1.0 01:KB-04-S        6.95     .503 No_date   27:43   78.64  n/a      .000
R0100:C00205------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-05          5.19    1.406 No_date   28:00   82.69 .934      .000
      [XIMP=.93:TIMP=.93]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 186.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00206------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-06         12.93    3.585 No_date   28:00   79.73 .900      .000
      [XIMP=.87:TIMP=.87]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .94:SLPI=4.75:LGI= 294.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00207------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-06         12.93    3.585 No_date   28:00   79.73  n/a      .000
     Major System   /     1.0 02:KB-06-MJ        .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:KB-06-MN      12.93    2.262 No_date   27:51   79.89  n/a      .000
      {MjSysSto=.6247E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00208------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-06-MJ        .00     .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:KB-06-MN      12.93    2.262 No_date   27:51   79.89  n/a      .000
                 SUM=     1.0 01:KB-06-S       12.93    2.262 No_date   27:51   79.89  n/a      .000
R0100:C00209------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-11          4.03    1.012 No_date   28:00   67.54 .763      .000
      [XIMP=.68:TIMP=.68]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI=2.00:LGI= 164.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00210------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-11          4.03    1.012 No_date   28:00   67.54  n/a      .000
     Major System   /     1.0 02:KB-11-MJ        .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:KB-11-MN       4.03     .577 No_date   27:51   67.60  n/a      .000
      {MjSysSto=.2184E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00211------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-11-MJ        .00     .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:KB-11-MN       4.03     .577 No_date   27:51   67.60  n/a      .000
                 SUM=     1.0 01:KB-11-S        4.03     .577 No_date   27:51   67.60  n/a      .000
R0100:C00212------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S1             4.99    1.426 No_date   28:00   82.69 .934      .000
      [XIMP=.93:TIMP=.93]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=2.00:LGI= 182.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00213------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-15          2.15     .548 No_date   28:00   75.20 .849      .000
      [XIMP=.79:TIMP=.79]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .16:SLPI= .30:LGI= 120.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00214------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-01A-S      40.82    3.600 No_date   28:44   36.91  n/a      .000
                    +     1.0 02:KB-01B-S      31.10    1.585 No_date   27:51   40.77  n/a      .000
                    +     1.0 02:KB-01C-S      13.78    1.350 No_date   28:37   42.09  n/a      .000
                    +     1.0 02:KB-03-S       84.78    5.270 No_date   29:11   41.33  n/a      .000
                    +     1.0 02:KB-04-S        6.95     .503 No_date   27:43   78.64  n/a      .000
                    +     1.0 02:KB-05          5.19    1.406 No_date   28:00   82.69  n/a      .000
                    +     1.0 02:KB-06-S       12.93    2.262 No_date   27:51   79.89  n/a      .000
                    +     1.0 02:KB-11-S        4.03     .577 No_date   27:51   67.60  n/a      .000
                    +     1.0 02:KB-15          2.15     .548 No_date   28:00   75.20  n/a      .000
                    +     1.0 02:S1             4.99    1.426 No_date   28:00   82.69  n/a      .000
                 SUM=     1.0 01:KB-P1        206.72   18.527 No_date   28:00   46.99  n/a      .000
R0100:C00215------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:KB-P1        206.72   18.527 No_date   28:00   46.99  n/a      .000
                out <=    1.0 01:KB-P1R       196.58   12.438 No_date   28:00   46.99  n/a      .000
           overflow <=    1.0 03:KB-P1ovf      10.14    6.062 No_date   28:00   46.99  n/a      .000
     {MxStoUsed=.7330E+00  m3, TotOvfVol=.4763E+00  m3, N-Ovf=    2, TotDurOvf=    1.hrs}
R0100:C00216------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-P1R       196.58   12.438 No_date   28:00   46.99  n/a      .000
                    +     1.0 02:KB-P1ovf      10.14    6.062 No_date   28:00   46.99  n/a      .000
                 SUM=     1.0 01:KB-Pond1     206.72   18.500 No_date   28:00   46.99  n/a      .000
R0100:C00217------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:KB-Pond1     206.72   18.500 No_date   28:00   46.99  n/a      .000
      fname :KB-Pond1.0100
      remark:Total Flows at KB first pond
R0100:C00218------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-07         10.86    2.908 No_date   28:00   79.06 .893      .000
      [XIMP=.86:TIMP=.86]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI=2.00:LGI= 269.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00219------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-07         10.86    2.908 No_date   28:00   79.06  n/a      .000
     Major System   /     1.0 02:KB-07-MJ        .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:KB-07-MN      10.86    2.094 No_date   27:53   79.26  n/a      .000
      {MjSysSto=.3334E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00220------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-07-MJ        .00     .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:KB-07-MN      10.86    2.094 No_date   27:53   79.26  n/a      .000
                 SUM=     1.0 01:KB-07-S       10.86    2.094 No_date   27:53   79.26  n/a      .000
R0100:C00221------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-08          6.61    1.609 No_date   28:00   65.36 .738      .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI=2.00:LGI= 210.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00222------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-08          6.61    1.609 No_date   28:00   65.36  n/a      .000
     Major System   /     1.0 02:KB-08-MJ        .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:KB-08-MN       6.61    1.058 No_date   27:52   65.50  n/a      .000
      {MjSysSto=.2397E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00223------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-08-MJ        .00     .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:KB-08-MN       6.61    1.058 No_date   27:52   65.50  n/a      .000
                 SUM=     1.0 01:KB-08-S        6.61    1.058 No_date   27:52   65.50  n/a      .000
R0100:C00224------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-09          2.60     .727 No_date   28:00   78.38 .885      .000
      [XIMP=.86:TIMP=.86]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=2.00:LGI= 132.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00225------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-10_1        2.37     .663 No_date   28:00   78.39 .885      .000
      [XIMP=.86:TIMP=.86]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=2.00:LGI= 126.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00226------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-10_2        1.14     .322 No_date   28:00   78.39 .885      .000
      [XIMP=.86:TIMP=.86]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=2.00:LGI=  87.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00227------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-12          4.86    1.294 No_date   28:00   74.45 .841      .000
      [XIMP=.79:TIMP=.79]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.10:SLPI=2.00:LGI= 180.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00228------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-12          4.86    1.294 No_date   28:00   74.45  n/a      .000
     Major System   /     1.0 02:KB-12-MJ        .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:KB-12-MN       4.86     .867 No_date   28:11   74.79  n/a      .000
      {MjSysSto=.1873E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00229------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-12-MJ        .00     .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:KB-12-MN       4.86     .867 No_date   28:11   74.79  n/a      .000
                 SUM=     1.0 01:KB-12-S        4.86     .867 No_date   28:11   74.79  n/a      .000
R0100:C00230------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-13         10.19    2.407 No_date   28:00   65.36 .738      .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI=2.00:LGI= 261.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00231------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-13         10.19    2.407 No_date   28:00   65.36  n/a      .000
     Major System   /     1.0 02:KB-13-MJ        .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:KB-13-MN      10.19    1.722 No_date   27:54   65.63  n/a      .000
      {MjSysSto=.2806E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00232------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-13-MJ        .00     .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:KB-13-MN      10.19    1.722 No_date   27:54   65.63  n/a      .000
                 SUM=     1.0 01:KB-13-S       10.19    1.722 No_date   27:54   65.63  n/a      .000
R0100:C00233------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-14          5.47    1.338 No_date   28:00   65.36 .738      .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI=2.00:LGI= 191.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00234------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-14          5.47    1.338 No_date   28:00   65.36  n/a      .000
     Major System   /     1.0 02:KB-14-MJ        .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:KB-14-MN       5.47     .873 No_date   27:52   65.48  n/a      .000
      {MjSysSto=.2041E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00235------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-14-MJ        .00     .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:KB-14-MN       5.47     .873 No_date   27:52   65.48  n/a      .000
                 SUM=     1.0 01:KB-14-S        5.47     .873 No_date   27:52   65.48  n/a      .000
R0100:C00236------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-16_2        3.42     .803 No_date   28:01   70.16 .792      .000
      [XIMP=.71:TIMP=.71]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .16:SLPI= .30:LGI= 151.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00237------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-Pond1     206.72   18.500 No_date   28:00   46.99  n/a      .000
                    +     1.0 02:KB-07-S       10.86    2.094 No_date   27:53   79.26  n/a      .000
                    +     1.0 02:KB-08-S        6.61    1.058 No_date   27:52   65.50  n/a      .000
                    +     1.0 02:KB-09          2.60     .727 No_date   28:00   78.38  n/a      .000
                    +     1.0 02:KB-10_1        2.37     .663 No_date   28:00   78.38  n/a      .000
                    +     1.0 02:KB-10_2        1.14     .322 No_date   28:00   78.39  n/a      .000
                    +     1.0 02:KB-12-S        4.86     .867 No_date   28:11   74.79  n/a      .000
                    +     1.0 02:KB-13-S       10.19    1.722 No_date   27:54   65.63  n/a      .000
                    +     1.0 02:KB-14-S        5.47     .873 No_date   27:52   65.48  n/a      .000
                    +     1.0 02:KB-16_2        3.42     .803 No_date   28:01   70.16  n/a      .000
                 SUM=     1.0 01:KB-P2        254.24   27.626 No_date   28:00   51.59  n/a      .000
R0100:C00238------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:KB-P2        254.24   27.626 No_date   28:00   51.59  n/a      .000
                out <=    1.0 01:KB-P2R       249.74   17.634 No_date   28:06   51.59  n/a      .000
           overflow <=    1.0 03:KB-P2ovf       4.50    6.910 No_date   28:06   51.59  n/a      .000
     {MxStoUsed=.1110E+01  m3, TotOvfVol=.2320E+00  m3, N-Ovf=    2, TotDurOvf=    0.hrs}
R0100:C00239------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-P2R       249.74   17.634 No_date   28:06   51.59  n/a      .000
                    +     1.0 02:KB-P2ovf       4.50    6.910 No_date   28:06   51.59  n/a      .000
                 SUM=     1.0 01:KB-Pond2     254.24   24.544 No_date   28:06   51.59  n/a      .000
R0100:C00240------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:KB-Pond2     254.24   24.544 No_date   28:06   51.59  n/a      .000
      fname :KB-Pond2.0100
      remark:Total Flows at KB second pond
R0100:C00241------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-16_1        2.80     .686 No_date   28:00   72.68 .821      .000
      [XIMP=.75:TIMP=.75]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .16:SLPI= .30:LGI= 137.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00242------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-Pond2     254.24   24.544 No_date   28:06   51.59  n/a      .000
                    +     1.0 02:KB-16_1        2.80     .686 No_date   28:00   72.68  n/a      .000
                 SUM=     1.0 01:KB-P3        257.04   24.930 No_date   28:06   51.82  n/a      .000
R0100:C00243------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:KB-P3        257.04   24.930 No_date   28:06   51.82  n/a      .000
                out <=    1.0 01:KB-P3R         8.56     .051 No_date   17:08   51.81  n/a      .000
           overflow <=    1.0 03:KB-P3ovf     248.48   24.659 No_date   28:07   51.82  n/a      .000
     {MxStoUsed=.1991E-02  m3, TotOvfVol=.1288E+02  m3, N-Ovf=    1, TotDurOvf=   23.hrs}
R0100:C00244------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-P3R         8.56     .051 No_date   17:08   51.81  n/a      .000
                    +     1.0 02:KB-P3ovf     248.48   24.659 No_date   28:07   51.82  n/a      .000
                 SUM=     1.0 01:KB-Pond3     257.04   24.710 No_date   28:07   51.82  n/a      .000
R0100:C00245------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:KB-Pond3     257.04   24.710 No_date   28:07   51.82  n/a      .000
      fname :KB-Pond3.0100
      remark:Total Flows at KB third pond
#*****************************************************************************
#    EXISTING / PROPOSED Subcatchments (Kennedy-Burnett SWM Facility (118080), SWM Modeling Approach, NOVATECH Report Ju
#    - TO FRASER-CLARKE DRAIN
#*****************************************************************************
R0100:C00246------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:FC-01          8.03    1.646 No_date   28:01   54.40 .614      .000
      [XIMP=.47:TIMP=.47]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 231.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00247------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:FC-01          8.03    1.646 No_date   28:01   54.40  n/a      .000
     Major System   /     1.0 02:FC-01-MJ        .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:FC-01-MN       8.03     .756 No_date   27:49   54.46  n/a      .000
      {MjSysSto=.6274E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00248------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:FC-01-MJ        .00     .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:FC-01-MN       8.03     .756 No_date   27:49   54.46  n/a      .000
                 SUM=     1.0 01:FC-01-S        8.03     .756 No_date   27:49   54.46  n/a      .000
R0100:C00249------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:FC-02         16.05    4.197 No_date   28:00   82.69 .934      .000
      [XIMP=.93:TIMP=.93]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 327.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00250------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:FC-02         16.05    4.197 No_date   28:00   82.69  n/a      .000
     Major System   /     1.0 02:FC-02-MJ        .45    1.768 No_date   28:05   82.69  n/a      .000
     Minor System   \     1.0 03:FC-02-MN      15.60    1.159 No_date   27:43   82.88  n/a      .000
      {MjSysSto=.2385E+04, TotOvfVol=.3716E+03, N-Ovf=    1, TotDurOvf=    0.hrs}
R0100:C00251------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:FC-02-MJ        .45    1.768 No_date   28:05   82.69  n/a      .000
                    +     1.0 02:FC-02-MN      15.60    1.159 No_date   27:43   82.88  n/a      .000
                 SUM=     1.0 01:FC-02-S       16.05    2.927 No_date   28:05   82.87  n/a      .000
R0100:C00252------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:FC-03          7.37    1.717 No_date   28:00   64.86 .732      .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 222.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00253------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:FC-03          7.37    1.717 No_date   28:00   64.86  n/a      .000
     Major System   /     1.0 02:FC-03-MJ        .34     .661 No_date   28:06   64.86  n/a      .000
     Minor System   \     1.0 03:FC-03-MN       7.03     .358 No_date   27:41   64.90  n/a      .000
      {MjSysSto=.1131E+04, TotOvfVol=.2188E+03, N-Ovf=    1, TotDurOvf=    0.hrs}
R0100:C00254------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:FC-03-MJ        .34     .661 No_date   28:06   64.86  n/a      .000
                    +     1.0 02:FC-03-MN       7.03     .358 No_date   27:41   64.90  n/a      .000
                 SUM=     1.0 01:FC-03-S        7.37    1.019 No_date   28:06   64.90  n/a      .000
R0100:C00255------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:FC-04         12.87    2.884 No_date   28:01   64.86 .732      .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 293.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00256------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:FC-04         12.87    2.884 No_date   28:01   64.86  n/a      .000
     Major System   /     1.0 02:FC-04-MJ        .44     .978 No_date   28:07   64.86  n/a      .000
     Minor System   \     1.0 03:FC-04-MN      12.43     .741 No_date   27:43   65.10  n/a      .000
      {MjSysSto=.1794E+04, TotOvfVol=.2828E+03, N-Ovf=    1, TotDurOvf=    0.hrs}
R0100:C00257------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:FC-04-MJ        .44     .978 No_date   28:07   64.86  n/a      .000
                    +     1.0 02:FC-04-MN      12.43     .741 No_date   27:43   65.10  n/a      .000
                 SUM=     1.0 01:FC-04-S       12.87    1.719 No_date   28:07   65.09  n/a      .000
#*****************************************************************************
#    PROPOSED Subcatchments (Kennedy-Burnett SWM Facility (118080), SWM Modeling Approach, NOVATECH Report June, 2020)
#    - TO JOCK RIVER
#*****************************************************************************
R0100:C00258------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:JR-01          8.24    1.891 No_date   28:00   64.86 .732      .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 234.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00259------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:JR-01          8.24    1.891 No_date   28:00   64.86  n/a      .000
     Major System   /     1.0 02:JR-01-MJ        .20     .471 No_date   28:06   64.86  n/a      .000
     Minor System   \     1.0 03:JR-01-MN       8.04     .563 No_date   27:44   64.95  n/a      .000
      {MjSysSto=.1040E+04, TotOvfVol=.1267E+03, N-Ovf=    1, TotDurOvf=    0.hrs}
R0100:C00260------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:JR-01-MJ        .20     .471 No_date   28:06   64.86  n/a      .000
                    +     1.0 02:JR-01-MN       8.04     .563 No_date   27:44   64.95  n/a      .000
                 SUM=     1.0 01:JR-01-S        8.24    1.034 No_date   28:06   64.95  n/a      .000
R0100:C00261------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:JR-02          1.59     .393 No_date   28:00   64.86 .732      .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 103.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00262------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:JR-02          1.59     .393 No_date   28:00   64.85  n/a      .000
```

```
     Major System   /     1.0 02:JR-02-MJ        .02     .087 No_date   28:03   64.85  n/a     .000
     Minor System   \     1.0 03:JR-02-MN       1.57     .153 No_date   27:44   65.24  n/a     .000
      {MjSysSto=.1530E+03, TotOvfVol=.1375E+02, N-Ovf=    1, TotDurOvf=    0.hrs}
R0100:C00263-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:JR-02-MJ        .02     .087 No_date   28:03   64.85  n/a     .000
                    +     1.0 02:JR-02-MN       1.57     .153 No_date   27:44   65.24  n/a     .000
                 SUM=     1.0 01:JR-02-S        1.59     .240 No_date   28:03   65.23  n/a     .000
#*****************************************************************************
#    Catchment FRASER
#    - To Fraser-Clarke drain (north of the Jock)
#    - Developed land with assumed 43% imp.
#    - 2020-12-17 Change Fraser area to be 35.1 as measured from QGIS
#    - 2020-12-17 All Fraser is undeveloped (Nashyd)
#*****************************************************************************
R0100:C00264-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:FRASER-DRN    13.65     .837 No_date   28:21   45.95 .519     .000
      [CN= 77.0: N= 3.00: Tp=  .43]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0100:C00265-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:FRASER-D      21.61    4.106 No_date   28:01   69.71 .787     .000
      [XIMP=.58:TIMP=.58]
      [LOSS= 2 :CN= 80.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 380.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 26.32: SMAX=175.50: SK= .010]
R0100:C00266-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:FRASER-D      21.61    4.106 No_date   28:01   69.71  n/a     .000
     Major System   /     1.0 02:FRASER-J        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:FRASER-N      21.61    2.281 No_date   27:51   69.88  n/a     .000
      {MjSysSto=.1163E+04, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00267-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:FRASER-J        .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:FRASER-N      21.61    2.281 No_date   27:51   69.88  n/a     .000
                 SUM=     1.0 01:FRASER-S      21.61    2.281 No_date   27:51   69.88  n/a     .000
R0100:C00268-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-Pond3     257.04   24.710 No_date   28:07   51.82  n/a     .000
                    +     1.0 02:S-1-B         55.36    3.260 No_date   28:23   45.95  n/a     .000
                    +     1.0 02:FRASER-DRN    13.65     .837 No_date   28:21   45.95  n/a     .000
                    +     1.0 02:FRASER-S      21.61    2.281 No_date   27:51   69.88  n/a     .000
                    +     1.0 02:N_KB       54279.41  143.629 No_date   36:32   39.19  n/a     .000
                    +     1.0 02:FC-01-S        8.03     .756 No_date   27:49   54.46  n/a     .000
                    +     1.0 02:FC-02-S       16.05    2.927 No_date   28:05   82.87  n/a     .000
                    +     1.0 02:FC-03-S        7.37    1.019 No_date   28:06   64.90  n/a     .000
                 SUM=     1.0 01:4241       54658.52  144.306 No_date   36:29   39.28  n/a     .000
R0100:C00269-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:4241       54658.52  144.306 No_date   36:29   39.28  n/a     .000
      fname :4241.0100
      remark:Total Flows at Ken-Burnett Outlet
# Hydrograph from Node Ken-Burnett to station 3633
# Channel X-Section obtained from RVCA Hydraulic Model - Station 4241
#
R0100:C00270-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:4241       54658.52  144.306 No_date   36:29   39.28  n/a     .000
     [RDT= 1.00] out<-    1.0 01:4241-out   54658.52  144.351 No_date   36:25   39.28  n/a     .000
      [L/S/n=  294./ .109/.035]
      {Vmax= 1.395:Dmax= 2.595}
R0100:C00271-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:4241-out   54658.52  144.351 No_date   36:25   39.28  n/a     .000
                    +     1.0 02:FC-04-S       12.87    1.719 No_date   28:07   65.09  n/a     .000
                    +     1.0 02:JR-01-S        8.24    1.034 No_date   28:06   64.95  n/a     .000
                    +     1.0 02:JR-02-S        1.59     .240 No_date   28:03   65.23  n/a     .000
                 SUM=     1.0 01:SN_KB      54681.21  144.394 No_date   36:25   39.29  n/a     .000
R0100:C00272-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_KB      54681.21  144.394 No_date   36:25   39.29  n/a     .000
      fname :SN_KB.0100
      remark:HYD_COMMENT=["Total Flows before Station 3633]
# Hydrograph from Station 3633 to Node Todd
# Channel X-Section obtained from RVCA Hydraulic Model - Station 3633
# JFSA 2021-02-26 change the channel length (at station 3633) from 650m to 608m and change the slope from 0.0498% to 0.2
#
R0100:C00273-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_KB      54681.21  144.394 No_date   36:25   39.29  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N_TO       54681.21  144.359 No_date   36:30   39.29  n/a     .000
      [L/S/n=  608./ .247/.035]
      {Vmax= 1.905:Dmax= 1.942}
#*****************************************************************************
#    Catchment Greenbank
#    - To Greenbank Drain (south of the Jock)
#    - JFSA 2021-01-18 add Greenbank pond as per JFSA, P598(06)-15, June 2016
#    - JFSA 2021-01-19 update area from 37.479 ha to 36.6 ha based on GIS measurements
#*****************************************************************************
R0100:C00274-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:Greenbank     36.60    7.069 No_date   28:01   71.80 .811     .000
      [XIMP=.64:TIMP=.68]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 494.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0100:C00275-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:Greenbank     36.60    7.069 No_date   28:01   71.80  n/a     .000
                out <=    1.0 01:GreenB_MN     36.60    5.350 No_date   28:07   71.80  n/a     .000
           overflow <=    1.0 03:GreenB_MJ       .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.9351E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00276-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N_TO       54681.21  144.359 No_date   36:30   39.29  n/a     .000
                    +     1.0 02:GreenB_MJ       .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:GreenB_MN     36.60    5.350 No_date   28:07   71.80  n/a     .000
                 SUM=     1.0 01:GreenB     54717.82  144.531 No_date   36:30   39.32  n/a     .000
R0100:C00277-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:GreenB     54717.82  144.531 No_date   36:30   39.32  n/a     .000
      fname :GreenB.0100
      remark:Total Flows at Greenbank Drain
#*****************************************************************************
#    Catchment TODD
#    - To Todd Drain (south of the Jock)
#    - Subdivision with 43% imp. as per Barrhaven South MSS
#    - 2020-11-30 increase imp. based on P598(04)-11
#    - 2020-11-30 update TODD Tributary Drainage Area to  = 146.015 ha based on P598(04)-11
#    - 2020-11-30 split TODD Drainage Area to MAJOR, MINOR, POND and ALL
#*****************************************************************************
#    - JFSA 2021-01-19 add "TODD_MN1" as part of Clarke("W_CLAR_MJ") and remove it from Todd
R0100:C00278-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:TODD_MN2       2.10     .428 No_date   28:00   66.78 .754     .000
      [XIMP=.53:TIMP=.57]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 118.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0100:C00279-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:TODD_MN3        .12     .025 No_date   28:00   66.78 .754     .000
      [XIMP=.53:TIMP=.57]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI=  28.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0100:C00280-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:TODD_MJ       30.23    5.210 No_date   28:02   68.65 .775     .000
      [XIMP=.52:TIMP=.64]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 449.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0100:C00281-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:TODD_ALL     112.91   17.286 No_date   28:04   66.60 .752     .000
      [XIMP=.52:TIMP=.57]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 868.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0100:C00282-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:TODD_P         3.06     .669 No_date   28:00   70.28 .794     .000
      [XIMP=.63:TIMP=.63]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 143.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
# 5-Year + 12% Capture
R0100:C00283-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:TODD_MJ       30.23    5.210 No_date   28:02   68.65  n/a     .000
                out <=    1.0 01:TODD_MJn      28.64    3.314 No_date   27:54   68.65  n/a     .000
           overflow <=    1.0 03:TODD_MJj       1.59    1.889 No_date   28:02   68.65  n/a     .000
     {MxStoUsed=.1512E-03  m3, TotOvfVol=.1094E+00  m3, N-Ovf=    1, TotDurOvf=    0.hrs}
# 5-Year + 12% Capture
R0100:C00284-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:TODD_MN2       2.10     .428 No_date   28:00   66.78  n/a     .000
                out <=    1.0 01:TODD_MN2n      1.99     .268 No_date   27:52   66.78  n/a     .000
           overflow <=    1.0 03:TODD_MN2j       .11     .155 No_date   28:00   66.78  n/a     .000
     {MxStoUsed=.1204E-03  m3, TotOvfVol=.7282E-02  m3, N-Ovf=    1, TotDurOvf=    0.hrs}
R0100:C00285-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:TODD_MN3        .12     .025 No_date   28:00   66.78  n/a     .000
                out <=    1.0 01:TODD_MN3n       .11     .016 No_date   27:52   66.78  n/a     .000
           overflow <=    1.0 03:TODD_MN3j       .01     .009 No_date   28:00   66.78  n/a     .000
     {MxStoUsed=.9808E-04  m3, TotOvfVol=.3933E-03  m3, N-Ovf=    1, TotDurOvf=    0.hrs}
R0100:C00286-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A2            25.50    3.884 No_date   28:03   62.46 .705     .000
      [XIMP=.42:TIMP=.52]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 566.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0100:C00287-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A2            25.50    3.884 No_date   28:03   62.46  n/a     .000
     Major System   /     1.0 02:A2-MJ          1.43    2.026 No_date   28:04   62.46  n/a     .000
     Minor System   \     1.0 03:A2-MN         24.07    1.818 No_date   27:50   62.71  n/a     .000
      {MjSysSto=.9240E+03, TotOvfVol=.8908E+03, N-Ovf=    1, TotDurOvf=    0.hrs}
R0100:C00288-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:TODD_MN2n      1.99     .268 No_date   27:52   66.78  n/a     .000
                    +     1.0 02:TODD_MN3n       .11     .016 No_date   27:52   66.78  n/a     .000
                    +     1.0 02:TODD_MJj       1.59    1.889 No_date   28:02   68.65  n/a     .000
                    +     1.0 02:TODD_P         3.06     .669 No_date   28:00   70.28  n/a     .000
                    +     1.0 02:TODD_ALL     112.91   17.286 No_date   28:04   66.60  n/a     .000
                    +     1.0 02:W_CLAR_MJn     1.69     .213 No_date   27:52   66.22  n/a     .000
                 SUM=     1.0 01:TODD         121.35   20.000 No_date   28:03   66.72  n/a     .000
R0100:C00289-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:TODD         121.35   20.000 No_date   28:03   66.72  n/a     .000
      fname :TODD.0100
      remark:Total Flows at Todd Drain
#*****************************************************************************
#    Todd Pond 3
#    - Rating curve obtained from Barrhaven South MSS modeling
#    - stantec 2007, Tributary Drainage Area to MSS Pond 3 = 193 ha
#*****************************************************************************
R0100:C00290-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:TODD         121.35   20.000 No_date   28:03   66.72  n/a     .000
                out <=    1.0 01:MS_P3        121.35   15.844 No_date   28:09   66.71  n/a     .000
           overflow <=    1.0 03:P3-OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.2834E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00291-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:GreenB     54717.82  144.531 No_date   36:30   39.32  n/a     .000
                    +     1.0 02:MS_P3        121.35   15.844 No_date   28:09   66.71  n/a     .000
                    +     1.0 02:P3-OVF          .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:TODD_MN2j       .11     .155 No_date   28:00   66.78  n/a     .000
                    +     1.0 02:A2-MJ          1.43    2.026 No_date   28:04   62.46  n/a     .000
                 SUM=     1.0 01:SN_TO      54840.70  144.934 No_date   36:28   39.38  n/a     .000
R0100:C00292-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_TO      54840.70  144.934 No_date   36:28   39.38  n/a     .000
      fname :SN_TO.0100
      remark:Total Flows at Todd Drain
#
# Hydrograph from Todd Drain routed to Corrigan Drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 2462
# 2021-02-19 Change the slope from 0.033 % (as per Stantec Report 2007) to 0.05 % so the model will be more stable and g
R0100:C00293-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_TO      54840.70  144.934 No_date   36:28   39.38  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:N_TO       54840.70  144.824 No_date   36:39   39.38  n/a     .000
      [L/S/n=  280./ .050/.045]
      {Vmax=  .881:Dmax= 3.680}
R0100:C00294-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:N_TO       54840.70  144.824 No_date   36:39   39.38  n/a     .000
      fname :N_TO.0100
      remark:Total inflows at Station 2462
#*****************************************************************************
#    Catchment CORRIG
#    - To Corrigan Drain (south of the Jock)
#    - Primarily Developed (medium density)
#    - JFSA JAN 2021, add Corrigan subcatchments as per IBI, July 2008
#*****************************************************************************
R0100:C00295-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:corr1         15.87    3.185 No_date   28:01   70.28 .794     .000
      [XIMP=.63:TIMP=.63]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 325.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0100:C00296-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:corr1         15.87    3.185 No_date   28:01   70.28  n/a     .000
     Major System   /     1.0 02:corr1-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:corr1-MN      15.87    1.818 No_date   28:25   70.70  n/a     .000
      {MjSysSto=.7879E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00297-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:corr2         12.47     .388 No_date   29:10   45.95 .519     .000
      [CN= 77.0: N= 3.00: Tp= 1.10]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0100:C00298-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A1-Corrig     15.75    2.624 No_date   28:01   62.46 .705     .000
      [XIMP=.42:TIMP=.52]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 324.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0100:C00299-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A1-Corrig     15.75    2.624 No_date   28:01   62.46  n/a     .000
     Major System   /     1.0 02:A1-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A1-MN         15.75    1.818 No_date   27:55   62.48  n/a     .000
      {MjSysSto=.3859E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00300-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:B1             2.77     .143 No_date   28:09   29.03 .328     .000
      [CN= 56.0: N= 3.00: Tp=  .23]
      [IaREC= 4.00: SMIN= 79.69: SMAX=531.24: SK= .010]
      [InterEventTime=  12.00]
R0100:C00301-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A4             1.27     .266 No_date   28:00   70.58 .797     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 253.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0100:C00302-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A4             1.27     .266 No_date   28:00   70.58  n/a     .000
     Major System   /     1.0 02:A4-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A4-MN          1.27     .266 No_date   28:00   70.58  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00303-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:A1-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:A1-MN         15.75    1.818 No_date   27:55   62.48  n/a     .000
                    +     1.0 02:corr1-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:corr1-MN      15.87    1.818 No_date   28:25   70.70  n/a     .000
                    +     1.0 02:corr2         12.47     .388 No_date   29:10   45.95  n/a     .000
                    +     1.0 02:B1             2.77     .143 No_date   28:09   29.03  n/a     .000
                    +     1.0 02:A4-MN          1.27     .266 No_date   28:00   70.58  n/a     .000
                 SUM=     1.0 01:MH101         48.13    4.085 No_date   28:02   59.20  n/a     .000
R0100:C00304-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH101         48.13    4.085 No_date   28:02   59.20  n/a     .000
      fname :MH101.0100
      remark:Total Flows at MH101
R0100:C00305-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH101         48.13    4.085 No_date   28:02   59.20  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:101-102       48.13    4.065 No_date   28:03   59.20  n/a     .000
      [L/S/n=  368./ .540/.013]
      {Vmax= 3.154:Dmax= 1.125}
      [Din= 1.05:Dused= 1.37}
R0100:C00306-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:A2-MN         24.07    1.818 No_date   27:50   62.71  n/a     .000
                    +     1.0 02:101-102       48.13    4.065 No_date   28:03   59.20  n/a     .000
                 SUM=     1.0 01:MH102         72.20    5.883 No_date   28:03   60.37  n/a     .000
R0100:C00307-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH102         72.20    5.883 No_date   28:03   60.37  n/a     .000
      fname :MH102.0100
      remark:Total Flows at MH102
R0100:C00308-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A5             1.60     .346 No_date   28:01   73.40 .829     .000
      [XIMP=.71:TIMP=.71]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 300.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0100:C00309-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:A4-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:A5             1.60     .346 No_date   28:01   73.40  n/a     .000
                 SUM=     1.0 01:A5T            1.60     .346 No_date   28:01   73.40  n/a     .000
R0100:C00310-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A5T            1.60     .346 No_date   28:01   73.40  n/a     .000
     Major System   /     1.0 02:A5-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A5-MN          1.60     .346 No_date   28:01   73.40  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00311-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH102         72.20    5.883 No_date   28:03   60.37  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:102-103       72.20    5.831 No_date   28:12   60.37  n/a     .000
      [L/S/n=  504./ .280/.013]
      {Vmax= 2.701:Dmax= 1.459}
      [Din= 1.50:Dused= 1.78}
R0100:C00312-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:102-103       72.20    5.831 No_date   28:12   60.37  n/a     .000
                    +     1.0 02:A5-MN          1.60     .346 No_date   28:01   73.40  n/a     .000
                 SUM=     1.0 01:MH103         73.80    6.079 No_date   28:04   60.65  n/a     .000
R0100:C00313-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH103         73.80    6.079 No_date   28:04   60.65  n/a     .000
      fname :MH103.0100
      remark:Total Flows at MH103
R0100:C00314-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH103         73.80    6.079 No_date   28:04   60.65  n/a     .000
     [RDT= 1.00] out<-    1.0 01:103-104       73.80    6.014 No_date   28:05   60.65  n/a     .000
      [L/S/n=  438./ .460/.013]
      {Vmax= 3.295:Dmax= 1.330}
      [Din= 1.65:Dused= 1.65}
R0100:C00315-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A6             1.56     .339 No_date   28:00   73.40 .829     .000
      [XIMP=.71:TIMP=.71]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 280.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0100:C00316-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:A5-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:A6             1.56     .339 No_date   28:00   73.40  n/a     .000
                 SUM=     1.0 01:A6T            1.56     .339 No_date   28:00   73.40  n/a     .000
R0100:C00317-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A6T            1.56     .339 No_date   28:00   73.40  n/a     .000
     Major System   /     1.0 02:A6-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A6-MN          1.56     .339 No_date   28:00   73.40  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00318-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:A6-MN          1.56     .339 No_date   28:00   73.40  n/a     .000
                    +     1.0 02:103-104       73.80    6.014 No_date   28:05   60.65  n/a     .000
                    +     1.0 02:TODD_MJn      28.64    3.314 No_date   27:54   68.65  n/a     .000
                 SUM=     1.0 01:MH104        104.00    9.601 No_date   28:03   63.04  n/a     .000
R0100:C00319-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH104        104.00    9.601 No_date   28:03   63.04  n/a     .000
      fname :MH104.0100
```

```
      remark:Total Flows at MH104
R0100:C00320-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:B2             12.31    2.012 No_date   28:02   62.88 .710     .000
      [XIMP=.41:TIMP=.54]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 417.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0100:C00321-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:B2             12.31    2.012 No_date   28:02   62.88  n/a     .000
     Major System   /     1.0 02:B2-MJ            .36     .820 No_date   28:05   62.88  n/a     .000
     Minor System   \     1.0 03:B2-MN          11.95    1.029 No_date   27:51   62.91  n/a     .000
      {MjSysSto=.5080E+03, TotOvfVol=.2245E+03, N-Ovf=    1, TotDurOvf=    0.hrs}
R0100:C00322-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:B2-MN          11.95    1.029 No_date   27:51   62.91  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:315-333        11.95    1.029 No_date   28:35   62.91  n/a     .000
      [L/S/n=  254./ .100/.013]
      {Vmax= 1.220:Dmax=  .838}
      [Din= 1.20:Dused= 1.20}
R0100:C00323-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:B3              5.59     .930 No_date   28:01   62.88 .710     .000
      [XIMP=.41:TIMP=.54]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 345.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0100:C00324-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:B3              5.59     .930 No_date   28:01   62.88  n/a     .000
     Major System   /     1.0 02:B3-MJ            .19     .402 No_date   28:04   62.88  n/a     .000
     Minor System   \     1.0 03:B3-MN           5.40     .459 No_date   27:50   63.05  n/a     .000
      {MjSysSto=.2270E+03, TotOvfVol=.1217E+03, N-Ovf=    1, TotDurOvf=    0.hrs}
R0100:C00325-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:B3-MN           5.40     .459 No_date   27:50   63.05  n/a     .000
                  +       1.0 02:315-333        11.95    1.029 No_date   28:35   62.91  n/a     .000
               SUM=       1.0 01:MH333          17.35    1.488 No_date   28:35   62.96  n/a     .000
R0100:C00326-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH333          17.35    1.488 No_date   28:35   62.96  n/a     .000
      fname :MH333.0100
      remark:Total Flows at MH333
R0100:C00327-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH333          17.35    1.488 No_date   28:35   62.96  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:333-335        17.35    1.489 No_date   28:27   62.96  n/a     .000
      [L/S/n=  251./ .100/.013]
      {Vmax= 1.302:Dmax= 1.057}
      [Din= 1.20:Dused= 1.29}
R0100:C00328-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:333-335        17.35    1.489 No_date   28:27   62.96  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:335-338        17.35    1.481 No_date   28:35   62.96  n/a     .000
      [L/S/n=  185./ .100/.013]
      {Vmax= 1.302:Dmax= 1.057}
      [Din= 1.20:Dused= 1.29}
R0100:C00329-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:335-338        17.35    1.481 No_date   28:35   62.96  n/a     .000
     [RDT= 1.00] out<-    1.0 01:338-340        17.35    1.480 No_date   28:35   62.96  n/a     .000
      [L/S/n=  233./ .100/.013]
      {Vmax= 1.330:Dmax=  .981}
      [Din= 1.35:Dused= 1.35}
R0100:C00330-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:B4              7.60    1.252 No_date   28:02   62.88 .710     .000
      [XIMP=.41:TIMP=.54]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 388.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0100:C00331-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:B4              7.60    1.252 No_date   28:02   62.88  n/a     .000
     Major System   /     1.0 02:B4-MJ            .17     .411 No_date   28:06   62.88  n/a     .000
     Minor System   \     1.0 03:B4-MN           7.43     .655 No_date   27:51   62.90  n/a     .000
      {MjSysSto=.3230E+03, TotOvfVol=.1079E+03, N-Ovf=    1, TotDurOvf=    0.hrs}
R0100:C00332-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:338-340        17.35    1.480 No_date   28:35   62.96  n/a     .000
                  +       1.0 02:B4-MN           7.43     .655 No_date   27:51   62.90  n/a     .000
               SUM=       1.0 01:MH340          24.78    2.126 No_date   28:34   62.94  n/a     .000
R0100:C00333-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH340          24.78    2.126 No_date   28:34   62.94  n/a     .000
      fname :MH340.0100
      remark:Total Flows at MH340
R0100:C00334-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH340          24.78    2.126 No_date   28:34   62.94  n/a     .000
     [RDT= 1.00] out<-    1.0 01:340-104        24.78    2.116 No_date   28:21   62.94  n/a     .000
      [L/S/n=  240./ .150/.013]
      {Vmax= 1.726:Dmax=  .923}
      [Din= 1.65:Dused= 1.65}
R0100:C00335-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:340-104        24.78    2.116 No_date   28:21   62.94  n/a     .000
                  +       1.0 02:MH104         104.00    9.601 No_date   28:03   63.04  n/a     .000
               SUM=       1.0 01:MH104T        128.78   11.560 No_date   28:04   63.02  n/a     .000
R0100:C00336-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH104T        128.78   11.560 No_date   28:04   63.02  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:104-105       128.78   11.359 No_date   28:10   63.02  n/a     .000
      [L/S/n=  380./ .100/.013]
      {Vmax= 2.115:Dmax= 2.014}
      {HGTH= 2.37:WDTH= 2.71}
R0100:C00337-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:B5              2.20     .437 No_date   28:00   66.83 .755     .000
      [XIMP=.57:TIMP=.57]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 187.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0100:C00338-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:B5              2.20     .437 No_date   28:00   66.83  n/a     .000
     Major System   /     1.0 02:B5-MJ            .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:B5-MN           2.20     .260 No_date   27:51   66.87  n/a     .000
      {MjSysSto=.9053E+02, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00339-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A8               .96     .219 No_date   28:00   73.40 .829     .000
      [XIMP=.71:TIMP=.71]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 186.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0100:C00340-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:A6-MJ            .00     .000 No_date    0:00     .00  n/a     .000
                  +       1.0 02:A8               .96     .219 No_date   28:00   73.40  n/a     .000
               SUM=       1.0 01:A8T              .96     .219 No_date   28:00   73.40  n/a     .000
R0100:C00341-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A8T              .96     .219 No_date   28:00   73.40  n/a     .000
     Major System   /     1.0 02:A8-MJ            .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A8-MN            .96     .219 No_date   28:00   73.40  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00342-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:104-105       128.78   11.359 No_date   28:10   63.02  n/a     .000
                  +       1.0 02:B5-MN           2.20     .260 No_date   27:51   66.87  n/a     .000
                  +       1.0 02:A8-MN            .96     .219 No_date   28:00   73.40  n/a     .000
                  +       1.0 02:TODD_MN3j        .01     .009 No_date   28:00   66.78  n/a     .000
               SUM=       1.0 01:MH105         131.94   11.688 No_date   28:10   63.16  n/a     .000
R0100:C00343-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH105         131.94   11.688 No_date   28:10   63.16  n/a     .000
      fname :MH105.0100
      remark:Total Flows at MH105
R0100:C00344-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
 *  DIVERT HYD      ->    1.0 01:A8-MJ            .00     .000 No_date    0:00     .00  n/a     .000
           diverted <=    1.0 02:A8-MJ-JR         .00     .000 No_date    0:00     .00  n/a     .000
           diverted <=    1.0 03:A8-MJ-B6         .00     .000 No_date    0:00     .00  n/a     .000
R0100:C00345-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    DIVERT HYD      ->    1.0 01:MH105         131.94   11.688 No_date   28:10   63.16  n/a     .000
           diverted <=    1.0 02:MH105-JR       36.57    8.679 No_date   28:10   63.16  n/a     .000
           diverted <=    1.0 03:MH105-B6       95.37    3.009 No_date   28:10   63.16  n/a     .000
R0100:C00346-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:B7              7.19    1.283 No_date   28:01   62.88 .710     .000
      [XIMP=.41:TIMP=.54]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 211.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0100:C00347-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:B4-MJ            .17     .411 No_date   28:06   62.88  n/a     .000
                  +       1.0 02:B7              7.19    1.283 No_date   28:01   62.88  n/a     .000
               SUM=       1.0 01:B7-B4MJ         7.36    1.300 No_date   28:06   62.88  n/a     .000
R0100:C00348-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:B7-B4MJ         7.36    1.300 No_date   28:06   62.88  n/a     .000
     Major System   /     1.0 02:B7R-MJ           .36     .671 No_date   28:06   62.88  n/a     .000
     Minor System   \     1.0 03:B7R-MN          7.00     .629 No_date   28:31   62.97  n/a     .000
      {MjSysSto=.3110E+03, TotOvfVol=.2280E+03, N-Ovf=    1, TotDurOvf=    0.hrs}
R0100:C00349-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:B7R-MN          7.00     .629 No_date   28:31   62.97  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:360-106A        7.00     .629 No_date   28:31   62.97  n/a     .000
      [L/S/n=  167./ .100/.013]
      {Vmax= 1.089:Dmax=  .665}
      [Din= 1.05:Dused= 1.05}
R0100:C00350-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:B6              3.29     .602 No_date   28:00   62.88 .710     .000
      [XIMP=.41:TIMP=.54]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 148.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0100:C00351-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:B6              3.29     .602 No_date   28:00   62.88  n/a     .000
     Major System   /     1.0 02:B6-MJ            .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:B6-MN           3.29     .064 No_date   27:33   62.92  n/a     .000
      {MjSysSto=.7353E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00352-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:EX-LAND        32.50    5.231 No_date   28:02   62.70 .708     .000
      [XIMP=.50:TIMP=.50]
      [LOSS= 2 :CN= 74.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 465.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 36.67: SMAX=244.49: SK= .010]
R0100:C00353-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:EX-LAND        32.50    5.231 No_date   28:02   62.70  n/a     .000
     Major System   /     1.0 02:EX-LAND-MJ      1.77    2.874 No_date   28:03   62.70  n/a     .000
     Minor System   \     1.0 03:EX-LAND-MN     30.73    2.275 No_date   27:48   62.82  n/a     .000
      {MjSysSto=.1365E+04, TotOvfVol=.1111E+04, N-Ovf=    1, TotDurOvf=    0.hrs}
R0100:C00354-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:B7R-MJ           .36     .671 No_date   28:06   62.88  n/a     .000
                  +       1.0 02:EX-LAND-MJ      1.77    2.874 No_date   28:03   62.70  n/a     .000
                  +       1.0 02:B5-MJ            .00     .000 No_date    0:00     .00  n/a     .000
                  +       1.0 02:B6-MJ            .00     .000 No_date    0:00     .00  n/a     .000
                  +       1.0 02:B6-MN           3.29     .064 No_date   27:33   62.92  n/a     .000
                  +       1.0 02:A8-MJ-B6         .00     .000 No_date    0:00     .00  n/a     .000
               SUM=       1.0 01:B6-B7ExMJ       5.42    3.483 No_date   28:03   62.85  n/a     .000
R0100:C00355-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:B6-B7ExMJ       5.42    3.483 No_date   28:03   62.85  n/a     .000
     Major System   /     1.0 02:B6R-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:B6R-MN          5.42     .064 No_date   27:33   62.85  n/a     .000
      {MjSysSto=.1339E+04, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00356-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH105-B6       95.37    3.009 No_date   28:10   63.16  n/a     .000
     [RDT= 1.00] out<-    1.0 01:105-106A       95.37    3.009 No_date   28:04   63.16  n/a     .000
      [L/S/n=  208./ .100/.013]
      {Vmax= 1.597:Dmax= 1.249}
      [Din= 1.80:Dused= 1.80}
R0100:C00357-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:360-106A        7.00     .629 No_date   28:31   62.97  n/a     .000
                  +       1.0 02:105-106A       95.37    3.009 No_date   28:04   63.16  n/a     .000
                  +       1.0 02:B6R-MN          5.42     .064 No_date   27:33   62.85  n/a     .000
                  +       1.0 02:B6R-MJ           .00     .000 No_date    0:00     .00  n/a     .000
               SUM=       1.0 01:MH106A        107.80    3.702 No_date   28:10   63.13  n/a     .000
R0100:C00358-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH106A        107.80    3.702 No_date   28:10   63.13  n/a     .000
      fname :MH106A.0100
      remark:Total Flows at MH106A
R0100:C00359-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH106A        107.80    3.702 No_date   28:10   63.13  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:106A-106      107.80    3.757 No_date   28:13   63.13  n/a     .000
      [L/S/n=  190./ .100/.013]
      {Vmax= 1.635:Dmax= 1.487}
      [Din= 1.80:Dused= 1.81}
R0100:C00360-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A9              2.44     .539 No_date   28:00   73.40 .829     .000
      [XIMP=.71:TIMP=.71]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 262.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0100:C00361-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A9              2.44     .539 No_date   28:00   73.40  n/a     .000
     Major System   /     1.0 02:A9-MJ            .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A9-MN           2.44     .539 No_date   28:00   73.40  n/a     .000
R0100:C00362-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:106A-106      107.80    3.757 No_date   28:13   63.13  n/a     .000
                  +       1.0 02:A9-MN           2.44     .539 No_date   28:00   73.40  n/a     .000
               SUM=       1.0 01:MH106         110.24    4.227 No_date   28:00   63.36  n/a     .000
R0100:C00363-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH106         110.24    4.227 No_date   28:00   63.36  n/a     .000
      fname :MH106.0100
      remark:Total Flows at MH106
R0100:C00364-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH106         110.24    4.227 No_date   28:00   63.36  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:106-107       110.24    4.179 No_date   28:02   63.36  n/a     .000
      [L/S/n=  123./ .100/.013]
      {Vmax= 1.690:Dmax= 1.563}
      [Din= 1.80:Dused= 1.90}
R0100:C00365-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A10             4.14     .693 No_date   28:01   59.73 .674     .000
      [XIMP=.35:TIMP=.47]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 183.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0100:C00366-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A10             4.14     .693 No_date   28:01   59.73  n/a     .000
     Major System   /     1.0 02:A10-MJ           .09     .218 No_date   28:05   59.73  n/a     .000
     Minor System   \     1.0 03:A10-MN          4.05     .310 No_date   27:48   60.02  n/a     .000
      {MjSysSto=.2280E+03, TotOvfVol=.5334E+02, N-Ovf=    1, TotDurOvf=    0.hrs}
R0100:C00367-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A11            10.61    1.941 No_date   28:01   67.38 .761     .000
      [XIMP=.53:TIMP=.62]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 379.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0100:C00368-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A11            10.61    1.941 No_date   28:01   67.38  n/a     .000
     Major System   /     1.0 02:A11-MJ           .16     .564 No_date   28:06   67.38  n/a     .000
     Minor System   \     1.0 03:A11-MN         10.45     .993 No_date   28:34   67.69  n/a     .000
      {MjSysSto=.5560E+03, TotOvfVol=.1090E+03, N-Ovf=    1, TotDurOvf=    0.hrs}
R0100:C00369-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:106-107       110.24    4.179 No_date   28:02   63.36  n/a     .000
                  +       1.0 02:A10-MN          4.05     .310 No_date   27:48   60.02  n/a     .000
                  +       1.0 02:A11-MN         10.45     .993 No_date   28:34   67.69  n/a     .000
               SUM=       1.0 01:MH107         124.74    5.482 No_date   28:02   63.62  n/a     .000
R0100:C00370-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH107         124.74    5.482 No_date   28:02   63.62  n/a     .000
      fname :MH107.0100
      remark:Total Flows at MH107
R0100:C00371-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH107         124.74    5.482 No_date   28:02   63.62  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:107-119       124.74    5.468 No_date   28:04   63.62  n/a     .000
      [L/S/n=  114./ .120/.013]
      {Vmax= 1.932:Dmax= 1.665}
      [Din= 1.80:Dused= 2.03}
R0100:C00372-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:107-119       124.74    5.468 No_date   28:04   63.62  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:119-108       124.74    5.480 No_date   28:05   63.62  n/a     .000
      [L/S/n=   66./ .120/.013]
      {Vmax= 1.930:Dmax= 1.664}
      [Din= 1.80:Dused= 2.03}
R0100:C00373-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A12            12.29    2.213 No_date   28:01   62.88 .710     .000
      [XIMP=.41:TIMP=.54]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 183.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0100:C00374-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A12            12.29    2.213 No_date   28:01   62.88  n/a     .000
     Major System   /     1.0 02:A12-MJ           .23     .599 No_date   28:05   62.88  n/a     .000
     Minor System   \     1.0 03:A12-MN         12.06    1.029 No_date   27:48   63.11  n/a     .000
      {MjSysSto=.6720E+03, TotOvfVol=.1477E+03, N-Ovf=    1, TotDurOvf=    0.hrs}
R0100:C00375-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A13             2.59     .540 No_date   28:01   73.40 .829     .000
      [XIMP=.71:TIMP=.71]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 379.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0100:C00376-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A13             2.59     .540 No_date   28:01   73.40  n/a     .000
     Major System   /     1.0 02:A13-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A13-MN          2.59     .540 No_date   28:01   73.40  n/a     .000
R0100:C00377-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:Pond-Block      2.94     .490 No_date   28:00   59.56 .673     .000
      [XIMP=.41:TIMP=.41]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 183.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0100:C00378-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:119-108       124.74    5.480 No_date   28:05   63.62  n/a     .000
                  +       1.0 02:A13-MN          2.59     .540 No_date   28:01   73.40  n/a     .000
                  +       1.0 02:A12-MN         12.06    1.029 No_date   27:48   63.11  n/a     .000
               SUM=       1.0 01:MH108         139.38    6.996 No_date   28:03   63.75  n/a     .000
R0100:C00379-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH108         139.38    6.996 No_date   28:03   63.75  n/a     .000
      fname :MH108.0100
      remark:Total Flows at MH108
R0100:C00380-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH108         139.38    6.996 No_date   28:03   63.75  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:108-116       139.38    6.987 No_date   28:04   63.75  n/a     .000
      [L/S/n=   77./ .130/.013]
      {Vmax= 2.116:Dmax= 1.798}
      [Din= 1.80:Dused= 2.19}
R0100:C00381-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:108-116       139.38    6.987 No_date   28:04   63.75  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:116-corrig    139.38    6.949 No_date   28:06   63.75  n/a     .000
      [L/S/n=   80./ .130/.013]
      {Vmax= 2.115:Dmax= 1.797}
      [Din= 1.80:Dused= 2.19}
R0100:C00382-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:116-corrig    139.38    6.949 No_date   28:06   63.75  n/a     .000
                  +       1.0 02:Pond-Block      2.94     .490 No_date   28:00   59.56  n/a     .000
               SUM=       1.0 01:Corrigan      142.32    7.300 No_date   28:04   63.67  n/a     .000
R0100:C00383-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:Corrigan      142.32    7.300 No_date   28:04   63.67  n/a     .000
      fname :Corrigan.0100
      remark:HYD_COMMENT=["Total Flows at Corrigan Pond]
R0100:C00384-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:Corrigan      142.32    7.300 No_date   28:04   63.67  n/a     .000
                out <=    1.0 01:Co-P          142.32    6.658 No_date   28:15   63.67  n/a     .000
           overflow <=    1.0 03:Co-P-OVF         .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.1044E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00385-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:Co-P-OVF         .00     .000 No_date    0:00     .00  n/a     .000
                  +       1.0 02:Co-P          142.32    6.658 No_date   28:15   63.67  n/a     .000
                  +       1.0 02:N_TO        54840.70  144.824 No_date   36:39   39.38  n/a     .000
                  +       1.0 02:MH105-JR       36.57    8.679 No_date   28:10   63.16  n/a     .000
                  +       1.0 02:A8-MJ-JR         .00     .000 No_date    0:00     .00  n/a     .000
```

```
                   +     1.0 02:A9-MJ          .00     .000 No_date    0:00     .00  n/a     .000
                   +     1.0 02:A10-MJ         .09     .218 No_date   28:05   59.73  n/a     .000
                   +     1.0 02:A11-MJ         .16     .564 No_date   28:06   67.38  n/a     .000
                   +     1.0 02:A12-MJ         .23     .599 No_date   28:05   62.88  n/a     .000
                   +     1.0 02:A13-MJ         .00     .000 No_date    0:00     .00  n/a     .000
                 SUM=    1.0 01:corrig     55020.08  145.505 No_date   36:37   39.46  n/a     .000
R0100:C00386------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD             1.0 01:corrig     55020.08  145.505 No_date   36:37   39.46  n/a     .000
      fname :corrig.0100
      remark:Total Flows at Corrigan Pond
#*******************************************************************************
#    Corrigan Pond 1
#    - Rating curve obtained from Barrhaven South MSS modeling
#    - Tributary Drainage Area to MSS Pond 1 = 145 ha
#*******************************************************************************
#
# Hydrograph from Corrigan Drain routed to Jockvale Road
# Channel X-Section obtained from RVCA Hydraulic Model - Station 2462
#
R0100:C00387------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:corrig     55020.08  145.505 No_date   36:37   39.46  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N_MI       55020.08  145.490 No_date   36:40   39.46  n/a     .000
      [L/S/n=  580./ .445/.045]
      {Vmax= 2.170:Dmax= 2.124}
#*******************************************************************************
#    Catchment MILLS
#    - To SWM Facility north of the Jock
#    - Primarily residental development
#*******************************************************************************
R0100:C00388------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:MILLS        175.99   20.390 No_date   28:06   56.87 .642     .000
      [XIMP=.38:TIMP=.38]
      [LOSS= 2 :CN= 74.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI=1118.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 36.67: SMAX=244.49: SK= .010]
#*******************************************************************************
#    Chapman Mills SWM Pond
#    - Rating curve obtained from CCL hydraulic modeling
#*******************************************************************************
R0100:C00389------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:MILLS        175.99   20.390 No_date   28:06   56.87  n/a     .000
                out <=    1.0 01:MILL_P       146.22    4.050 No_date   28:08   56.87  n/a     .000
           overflow <=    1.0 03:MIL-OV        29.77   16.228 No_date   28:08   56.87  n/a     .000
     {MxStoUsed=.2310E+01  m3, TotOvfVol=.1693E+01  m3, N-Ovf=    2, TotDurOvf=    1.hrs}
R0100:C00390------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              1.0 02:N_MI       55020.08  145.490 No_date   36:40   39.46  n/a     .000
                   +     1.0 02:MIL-OV        29.77   16.228 No_date   28:08   56.87  n/a     .000
                   +     1.0 02:MILL_P       146.22    4.050 No_date   28:08   56.87  n/a     .000
                 SUM=    1.0 01:SN_MI      55196.07  146.161 No_date   36:39   39.51  n/a     .000
R0100:C00391------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD             1.0 01:SN_MI      55196.07  146.161 No_date   36:39   39.51  n/a     .000
      fname :SN_MI.0100
      remark:Total Flows at Jockvale Road
#
# Hydrograph from Jockvale Road routed to Heart's Desire
# Channel X-Section obtained from RVCA Hydraulic Model - Station 689
#
R0100:C00392------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_MI      55196.07  146.161 No_date   36:39   39.51  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N_DE       55196.07  145.839 No_date   36:54   39.51  n/a     .000
      [L/S/n= 1962./ .223/.045]
      {Vmax= 1.642:Dmax= 2.659}
#*******************************************************************************
#    Catchment DESIRE
#    - To Jock River (north of the Jock)
#    - Rural-estate subdivision (Heart's Desire Community)
#*******************************************************************************
R0100:C00393------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:DESIRE        23.78    3.004 No_date   28:03   53.11 .600     .000
      [XIMP=.25:TIMP=.25]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 400.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
#*******************************************************************************
#    Catchment JOCKVA
#    - To Jockvale SWM Facility
#    - Residential development & golf course
#    - JFSA 2021-01-11 update JOCKVA after updating CORRIG as per IBI GROUP, July 2008.
#      JOCKVA area became 225.13 ha instead of 257.63 ha. JOCKVA separated into two areas JOCKVA and EX-LAND 32.5 ha as
#*******************************************************************************
R0100:C00394------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:JOCKVA       225.13   28.623 No_date   28:07   62.70 .708     .000
      [XIMP=.50:TIMP=.50]
      [LOSS= 2 :CN= 74.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI=1311.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 36.67: SMAX=244.49: SK= .010]
R0100:C00395------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              1.0 02:EX-LAND-MN    30.73    2.275 No_date   27:48   62.82  n/a     .000
                   +     1.0 02:JOCKVA       225.13   28.623 No_date   28:07   62.70  n/a     .000
                   +     1.0 02:B2-MJ          .36     .820 No_date   28:05   62.88  n/a     .000
                   +     1.0 02:B3-MJ          .19     .402 No_date   28:04   62.88  n/a     .000
                 SUM=    1.0 01:JOCKVA-TO    256.41   31.850 No_date   28:06   62.71  n/a     .000
R0100:C00396------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD             1.0 01:JOCKVA-TO    256.41   31.850 No_date   28:06   62.71  n/a     .000
      fname :JOCKVA-TO.0100
      remark:Total Flows at KB first pond
#*******************************************************************************
#    Jockvale SWM Facility
#    - Rating curve obtained from Jockvale Servicing Study (CCL 1999)
#*******************************************************************************
R0100:C00397------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:JOCKVA-TO    256.41   31.850 No_date   28:06   62.71  n/a     .000
                out <=    1.0 01:JOCK_P       256.41   12.850 No_date   28:35   62.71  n/a     .000
           overflow <=    1.0 03:JO-OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.6430E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00398------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              1.0 02:N_DE       55196.07  145.839 No_date   36:54   39.51  n/a     .000
                   +     1.0 02:DESIRE        23.78    3.004 No_date   28:03   53.11  n/a     .000
                   +     1.0 02:JO-OVF          .00     .000 No_date    0:00     .00  n/a     .000
                   +     1.0 02:JOCK_P       256.41   12.850 No_date   28:35   62.71  n/a     .000
                 SUM=    1.0 01:SN_DE      55476.26  146.840 No_date   36:52   39.63  n/a     .000
R0100:C00399------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD             1.0 01:SN_DE      55476.26  146.840 No_date   36:52   39.63  n/a     .000
      fname :SN_DE.0100
      remark:Total Flows at Heart's Desire
#
# Hydrograph from Heart's Desire routed to Rideau River
# Channel X-Section obtained from RVCA Hydraulic Model - Station 0
#
R0100:C00400------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_DE      55476.26  146.840 No_date   36:52   39.63  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N1         55476.26  146.826 No_date   36:55   39.63  n/a     .000
      [L/S/n=  563./ .967/.045]
      {Vmax= 2.218:Dmax= 1.328}
#*******************************************************************************
#    Catchment S-2
#    - To Jock River (north and south)
#    - Undeveloped floodplain and river
#*******************************************************************************
R0100:C00401------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:S-2          102.94    5.685 No_date   28:20   40.95 .462     .000
      [CN= 72.0: N= 3.00: Tp=  .40]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
R0100:C00402------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              1.0 02:N1         55476.26  146.826 No_date   36:55   39.63  n/a     .000
                   +     1.0 02:S-2          102.94    5.685 No_date   28:20   40.95  n/a     .000
                 SUM=    1.0 01:SN_N1      55579.20  147.102 No_date   36:55   39.63  n/a     .000
R0100:C00403------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD             1.0 01:SN_N1      55579.20  147.102 No_date   36:55   39.63  n/a     .000
      fname :SN_N1.0100
      remark:Total Flows at Rideau River
###############################################################################
R0100:C00002-----------------------------------------------------------------------------------
    FINISH
-----------------------------------------------------------------------------------------------
***********************************************************************************************
     WARNINGS / ERRORS / NOTES
     -------------------------
R0002:C00283  ROUTE RESERVOIR
*** WARNING: Inflow peak was not reduced! Check OUTFLOW/STORAGE table or reduce DT.
R0002:C00305  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0002:C00311  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0002:C00344  DIVERT HYD      ->
*** NOTE: Inflow hyd. is dry and cannot be diverted.
R0002:C00364  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0002:C00371  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0002:C00372  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0002:C00380  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0002:C00381  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0005:C00283  ROUTE RESERVOIR
*** WARNING: Inflow peak was not reduced! Check OUTFLOW/STORAGE table or reduce DT.
R0005:C00305  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0005:C00311  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0005:C00327  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0005:C00328  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0005:C00336  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0005:C00344  DIVERT HYD      ->
*** NOTE: Inflow hyd. is dry and cannot be diverted.
R0005:C00359  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0005:C00364  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0005:C00371  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0005:C00372  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0005:C00380  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0005:C00381  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0010:C00305  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0010:C00311  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0010:C00327  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0010:C00328  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0010:C00336  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0010:C00344  DIVERT HYD      ->
*** NOTE: Inflow hyd. is dry and cannot be diverted.
R0010:C00359  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0010:C00364  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0010:C00371  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0010:C00372  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0010:C00380  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0010:C00381  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0025:C00305  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0025:C00311  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0025:C00327  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0025:C00328  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0025:C00336  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0025:C00344  DIVERT HYD      ->
*** NOTE: Inflow hyd. is dry and cannot be diverted.
R0025:C00359  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0025:C00364  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0025:C00371  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0025:C00372  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0025:C00380  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0025:C00381  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0050:C00305  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0050:C00311  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0050:C00327  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0050:C00328  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0050:C00336  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0050:C00344  DIVERT HYD      ->
*** NOTE: Inflow hyd. is dry and cannot be diverted.
R0050:C00359  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0050:C00364  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0050:C00371  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0050:C00372  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0050:C00380  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0050:C00381  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0100:C00305  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0100:C00311  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0100:C00327  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0100:C00328  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0100:C00336  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0100:C00344  DIVERT HYD      ->
*** NOTE: Inflow hyd. is dry and cannot be diverted.
R0100:C00359  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0100:C00364  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0100:C00371  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0100:C00372  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0100:C00380  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0100:C00381  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
   Simulation ended on 2021-03-04     at 11:57:06
=============================================================================================
```

Ottawa. ON
Paris. ON
Gatineau. QC
Montréal. QC
Québec. QC

Attachment E

Model 4B – Jock River Reach One Future Conditions – With SWM controls

JFSA, 2021

SWMHYMO Input & Summary files

```
20    Metric units / ID numbers OFF
*#****************************************************************************
*#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
*#****************************************************************************
*#  Project Name: [Jock River]    Project Number: [1474-16]
*#  Date          : 04-03-2021
*#  Modeller      : [M.M.]
*#  Company       : JFSAinc.
*#  License #     :  2549237
*#****************************************************************************
*# CALIBRATION OF SUMMER MODEL PARAMETERS
*# USING CONTINUOUS SIMULATIONS
*# Rainfall data from JFSA raingauge installed at site + other gauges by the City
*# Use data collected from May 1st to July 14, 2003
*# 2020-11-30 change TMJSTO in COMPUTE DUALHYD (TMJSTO = 0.1 instead of 0.0001)
*# 2020-12-01 correct pond curve values
*# 2020-12-01 change W_CLAR_BRAZ XIMP to 0.55, SLPI=[0.5](%) (impervious slope), and
LGI up to 700m
*# 2021-02-19 Change the slope for ROUTE CHANNEL Station 2462 (NHYDout=["N_TO"]
,NHYDin=["SN_TO"]) from 0.033 % (as per Stantec Report 2007) to 0.05 % so the model
will be more stable and give reasonable results. It is justifiable as ROUTE CHANNELs
aren't well suited to really flat slopes.
*# 2021-02-19 Change the slope for ROUTE CHANNEL Station 5002 (NHYDout=["N_WC"]
,NHYDin=["SN_CE"]) from 0.01 % (as per Stantec Report 2007) to 0.0255 % so the model
will be more stable and give reasonable results. It is justifiable as ROUTE CHANNELs
aren't well suited to really flat slopes.
*
* Calibrated parameters for Summer 2003 data:  APII=50, APIK=0.85, CN=varies,
*                                              SK=0.01, InterEventTime=12,
*                                              GWResk=0.96, VHydCond=0.055
*
*# ---------------------------------------------------------------------------
*
*START                TZERO=[2003.0501],  METOUT=[2],  NSTORM=[1],  NRUN=[001]
*                     ["XAVG0315.STM"] average storm data a 15 minute time step
*                     The above rainf file is an average of the JFSA gauge data
*                     with the City of Ottawa rainfall data collected during
*                     the same period.
*%  2 yr, 24 hr SCS storm based on OTTAWA CDA IDF Curves
START                TZERO=[0.0],  METOUT=[2],  NSTORM=[1],  NRUN=[2]
                     ["C24SC002.stm"] <--storm filename, one per line for NSTORM time
*%-----------------|------------------------------------------------------------|
*%-----------------|------------------------------------------------------------|
READ STORM           STORM_FILENAME=["storm.001"]
*%-----------------|------------------------------------------------------------|
MODIFY STORM         ICASEms=[1],  NSHIFT=[96],
                     RedFACT=[1],
*%-----------------|------------------------------------------------------------|
DEFAULT VALUES       ICASEdef=[1],  read and print values
                     DEFVAL_FILENAME=["CitiGate.DEF"]
*%-----------------|------------------------------------------------------------|
COMPUTE API          APII=[50], APIK=[.85]/day
*%-----------------|------------------------------------------------------------|
*%-----------------|------------------------------------------------------------|
*#
*# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
*# of 1.32
*%-----------------|------------------------------------------------------------|
CONTINUOUS NASHYD    NHYD=["JR_HW"], DT=[1]min, AREA=[3680](ha),
                     DWF=[0](cms),  CN/C=[64], IA=[2.5](mm),
                     N=[3.0], TP=[7.13]hrs,
                     Continuous simulation parameters:
                     IaRECper=[4](hrs),
                     SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                     InterEventTime=[12](hrs)
                     Baseflow simulation parameters:
```

```
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
*#
*# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
*# of 1.32
*%-----------------|-----------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["SW_13"], DT=[1]min, AREA=[971](ha),
                    DWF=[0](cms),  CN/C=[61], IA=[2.5](mm),
                    N=[3.0], TP=[3.76]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
*#
*# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
*# of 1.80
*%-----------------|-----------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["JR_GWM"], DT=[1]min, AREA=[3074](ha),
                    DWF=[0](cms),  CN/C=[55], IA=[2.5](mm),
                    N=[3], TP=[11.33]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["JR_ASH"], DT=[1]min, AREA=[1781](ha),
                    DWF=[0](cms),  CN/C=[72], IA=[2.5](mm),
                    N=[3.0], TP=[3.91]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["SW_11"], DT=[1]min, AREA=[500](ha),
                    DWF=[0](cms),  CN/C=[66], IA=[2.5](mm),
                    N=[3.0], TP=[1.24]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
*#
*# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
*# of 1.80
*%-----------------|-----------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["NN_CK"], DT=[1]min, AREA=[1917](ha),
                    DWF=[0](cms),  CN/C=[66], IA=[2.5](mm),
```

```
                    N=[3.0], TP=[5.29]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
*#
*# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
*# of 1.52
*%-----------------|-----------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["SW_10"], DT=[1]min, AREA=[5666](ha),
                    DWF=[0](cms),  CN/C=[72], IA=[2.5](mm),
                    N=[3.0], TP=[8.00]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
*#
*# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
*# of 1.75
*%-----------------|-----------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["KG_CK"], DT=[1]min, AREA=[8376](ha),
                    DWF=[0](cms),  CN/C=[66], IA=[2.5](mm),
                    N=[3.0], TP=[11.66]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
*#
*# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
*# of 1.68
*%-----------------|-----------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["SW_9"], DT=[1]min, AREA=[1132](ha),
                    DWF=[0](cms),  CN/C=[70], IA=[2.5](mm),
                    N=[3.0], TP=[2.51]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
*#
*# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
*# of 1.82
*%-----------------|-----------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["NC_CK"], DT=[1]min, AREA=[4464](ha),
                    DWF=[0](cms),  CN/C=[62], IA=[2.5](mm),
                    N=[3.0], TP=[11.32]hrs,
                    Continuous simulation parameters:
```

```
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
*#
*# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
*# of 1.80
*%-----------------|-----------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["SW_8"], DT=[1]min, AREA=[131](ha),
                    DWF=[0](cms),  CN/C=[63], IA=[2.5](mm),
                    N=[3.0], TP=[0.90]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
*#
*# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
*# of 1.65
*%-----------------|-----------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["HB_DR"], DT=[1]min, AREA=[3854](ha),
                    DWF=[0](cms),  CN/C=[66], IA=[2.5](mm),
                    N=[3.0], TP=[8.42]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
*#
*# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
*# of 1.82
*%-----------------|-----------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["SW_7"], DT=[1]min, AREA=[3197](ha),
                    DWF=[0](cms),  CN/C=[57], IA=[2.5](mm),
                    N=[3.0], TP=[6.65]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
*#
*# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
*# of 1.75
*%-----------------|-----------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["SW_6"], DT=[1]min, AREA=[165](ha),
                    DWF=[0](cms),  CN/C=[67], IA=[2.5](mm),
                    N=[3.0], TP=[4.18]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
```

```
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|------------------------------------------------------------|
*#
*# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
*# of 1.67
*%-----------------|------------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["VG_DR"], DT=[1]min, AREA=[1332](ha),
                    DWF=[0](cms),  CN/C=[72], IA=[2.5](mm),
                    N=[3.0], TP=[5.95]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|------------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["SW_5"], DT=[1]min, AREA=[224](ha),
                    DWF=[0](cms),  CN/C=[77], IA=[2.5](mm),
                    N=[3.0], TP=[0.75]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|------------------------------------------------------------|
*#
*# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
*# of 1.20
*%-----------------|------------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["FL_CK"], DT=[1]min, AREA=[4945](ha),
                    DWF=[0](cms),  CN/C=[74], IA=[2.5](mm),
                    N=[3.0], TP=[4.45]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|------------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["SW_5A2"], DT=[1]min, AREA=[20](ha),
                    DWF=[0](cms),  CN/C=[81], IA=[2.5](mm),
                    N=[3.0], TP=[0.62]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|------------------------------------------------------------|
*#
*# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
*# of 1.61
*%-----------------|------------------------------------------------------------|
```

```
CONTINUOUS NASHYD   NHYD=["SW_5A1"], DT=[1]min, AREA=[1412](ha),
                    DWF=[0](cms),  CN/C=[75], IA=[2.5](mm),
                    N=[3.0], TP=[8.00]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-------------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["SW_4"], DT=[1]min, AREA=[585](ha),
                    DWF=[0](cms),  CN/C=[81], IA=[2.5](mm),
                    N=[3.0], TP=[1.75]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-------------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["LM_CK"], DT=[1]min, AREA=[1021](ha),
                    DWF=[0](cms),  CN/C=[80], IA=[2.5](mm),
                    N=[3.0], TP=[2.46]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-------------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["SW_2"], DT=[1]min, AREA=[177](ha),
                    DWF=[0](cms),  CN/C=[77], IA=[2.5](mm),
                    N=[3.0], TP=[0.75]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-------------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["SM_DR"], DT=[1]min, AREA=[1122](ha),
                    DWF=[0](cms),  CN/C=[81], IA=[2.5](mm),
                    N=[3.0], TP=[3.25]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-------------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["MO_DR"], DT=[1]min, AREA=[2737](ha),
                    DWF=[0](cms),  CN/C=[76], IA=[2.5](mm),
                    N=[3.0], TP=[3.03]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
```

```
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
*    -JFSA 2020 replaced SW_1 with a detailed model from Stantec Report 2007
*CONTINUOUS NASHYD   NHYD=["SW_1"], DT=[1]min, AREA=[3176](ha),
*                    DWF=[0](cms),  CN/C=[78], IA=[2.5](mm),
*                    N=[3.0], TP=[3.56]hrs,
*                    Continuous simulation parameters:
*                    IaRECper=[4](hrs),
*                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                    InterEventTime=[12](hrs)
*                    Baseflow simulation parameters:
*                    BaseFlowOption=[1] ,
*                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
*                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
*#
*# Routing hydrographs
*#
*# Starting with the addition of Jock River Headwater and Subwatershed 13
*#
ADD HYD             NHYDsum=["S_N13"], NHYDs to add=["JR_HW"+"SW_13"]
*%-----------------|-----------------------------------------------------------|
*#
*# Sum of hydrographs from Node 13 routed to Node 13A
*# (Approximated cross-section - see cross-section 258)
*# Use n=0.04 for summer conditions and n=0.025 for spring conditions
*#
ROUTE CHANNEL       NHYDout=["N13A"] ,NHYDin=["S_N13"],
                    RDT=[1](min),
                    CHLGTH=[9074](m),  CHSLOPE=[0.0220](%),
                                        FPSLOPE=[0.0220](%),
                    SECNUM=[1.0],       NSEG=[1]
                    ( SEGROUGH, SEGDIST (m))=[0.04,15.5] NSEG times
                    ( DISTANCE (m), ELEVATION (m))=
                          [-40, 132.5]
                          [-30, 132]
                          [-25, 131.5]
                          [-13, 130]
                          [-8, 127.00]
                          [-7, 126.50]
                          [-6, 126]
                          [-5.5, 125.50]
                          [0, 123.75]
                          [4.5, 125.50]
                          [6, 126]
                          [7.5, 126.5]
                          [9, 127]
                          [10, 127.5]
                          [11.5, 128.0]
                          [15.5, 129.5]
*%-----------------|-----------------------------------------------------------|
*#
*# Addition of Subwatershed Jock River at Goodwood Marsh to Node 13A
*#
ADD HYD             NHYDsum=["SN13A"], NHYDs to add=["N13A"+"JR_GWM"]
*%-----------------|-----------------------------------------------------------|
*#
*# Insertion of a reservoir to simulate the effects of the Goodwood Marsh
*#
ROUTE RESERVOIR     NHYDout=["RES_GM"] ,NHYDin=["SN13A"],
                    RDT=[1](min),
                          TABLE of ( OUTFLOW-STORAGE ) values
```

```
                                        (cms) - (ha-m)
                                      [   0.0 ,  0.0 ]
                                      [1.991, 2.144    ]
                                      [2.693, 39.826   ]
                                      [3.509, 81.697   ]
                                      [4.578, 318.774  ]
                                      [5.647, 594.947  ]
                                      [7.109, 910.219  ]
                                      [8.616, 1264.589  ]
                                      [10.371, 1658.057  ]
                                      [12.402, 2090.622 ]
                                      [22.056, 3462.487 ]
                                      [   -1  ,  -1  ]  (max twenty pts)
                            NHYDovf=["      "] ,
*%-----------------|------------------------------------------------------------|
*#
SAVE HYD              NHYD=["RES_GM"],  # OF PCYCLES=[-1],  ICASEsh=[-1]
                      HYD_FILENAME=["H_RESGM"]
                      HYD_COMMENT=["Outflow from Res GM"]
*%-----------------|------------------------------------------------------------|
*# Output of Reservoir Goodwood Marsh routed from Node 13A to Node 12
*# (Approximated cross-section - see cross-section 258)
*# Use n=0.04 for summer conditions and n=0.025 for spring conditions
ROUTE CHANNEL         NHYDout=["N12"] ,NHYDin=["RES_GM"] ,
                      RDT=[1](min),
                      CHLGTH=[5926](m),  CHSLOPE=[0.0759](%),
                                          FPSLOPE=[0.0759](%),
                      SECNUM=[1.0],       NSEG=[1]
                      ( SEGROUGH, SEGDIST (m))=[0.04,15.5] NSEG times
                      ( DISTANCE (m), ELEVATION (m))=
                            [-40, 132.5]
                            [-30, 132]
                            [-25, 131.5]
                            [-13, 130]
                            [-8, 127.00]
                            [-7, 126.50]
                            [-6, 126]
                            [-5.5, 125.50]
                            [0, 123.75]
                            [4.5, 125.50]
                            [6, 126]
                            [7.5, 126.5]
                            [9, 127]
                            [10, 127.5]
                            [11.5, 128.00]
                            [15.5, 129.5]
*%-----------------|------------------------------------------------------------|
*#
*# Addition of Subwatershed Jock River at Ashton to Node 12
*#
ADD HYD               NHYDsum=["S_N12"], NHYDs to add=["N12"+"JR_ASH"]
SAVE HYD              NHYD=["S_N12"],  # OF PCYCLES=[-1],  ICASEsh=[-1]
                      HYD_FILENAME=["H_SN12"]
                      HYD_COMMENT=["flow at S_N12 near Ashton"]
*%-----------------|------------------------------------------------------------|
*#
*# Sum of hydrographs from Node 12 routed to Node 11
*# (Approximated cross-section - see cross-section 258)
*# Use n=0.04 for summer conditions and n=0.025 for spring conditions
*ROUTE CHANNEL         NHYDout=["N11"] ,NHYDin=["S_N12"] ,
*                      RDT=[1](min),
*                      CHLGTH=[972](m),  CHSLOPE=[0.0514](%),
*                                          FPSLOPE=[0.0514](%),
*                      SECNUM=[1.0],       NSEG=[1]
*                      ( SEGROUGH, SEGDIST (m))=[0.04,15.5] NSEG times
*                      ( DISTANCE (m), ELEVATION (m))=
```

```
*                          [-40, 132.5]
*                          [-30, 132]
*                          [-25, 131.5]
*                          [-13, 130]
*                          [-8, 127.00]
*                          [-7, 126.50]
*                          [-6, 126]
*                          [-5.5, 125.50]
*                          [0, 123.75]
*                          [4.5, 125.50]
*                          [6, 126]
*                          [7.5, 126.5]
*                          [9, 127]
*                          [10, 127.5]
*                          [11.5, 128.00]
*                          [15.5, 129.5]
*%-----------------|-----------------------------------------------------------|
*#
*# Sum of hydrographs from Node 12 routed to Node 11 with Dummy section 248
*#
ROUTE CHANNEL       NHYDout=["Dum11"] ,NHYDin=["S_N12"] ,
                    RDT=[1](min),
                    CHLGTH=[972](m),  CHSLOPE=[0.054](%),
                                        FPSLOPE=[0.054](%),
                    SECNUM=[1.0],       NSEG=[1]
                    ( SEGROUGH, SEGDIST (m))=[0.04,15.5] NSEG times
                    ( DISTANCE (m), ELEVATION (m))=
                          [-40, 132.5]
                          [-30, 132]
                          [-25, 131.5]
                          [-13, 130]
                          [-8, 127.00]
                          [-7, 126.50]
                          [-6, 126]
                          [-5.5, 125.50]
                          [0, 123.75]
                          [4.5, 125.50]
                          [6, 126]
                          [7.5, 126.5]
                          [9, 127]
                          [10, 127.5]
                          [11.5, 128.00]
                          [15.5, 129.5]
*%-----------------|-----------------------------------------------------------|
*#
*# Addition of Subwatershed 11 and No Name Creek to Node 11
*#
ADD HYD             NHYDsum=["S_N11"], NHYDs to add=["Dum11"+"SW_11"+"NN_CK"]
*%-----------------|-----------------------------------------------------------|
*#
*# Sum of hydrographs from Node 11 routed to Node 10
*# Section 1
*#
ROUTE CHANNEL       NHYDout=["N10"] ,NHYDin=["S_N11"] ,
                    RDT=[1](min),
                    CHLGTH=[14028](m),  CHSLOPE=[0.1568](%),
                                        FPSLOPE=[0.1568](%),
                    SECNUM=[1.0],       NSEG=[5]
                    ( SEGROUGH, SEGDIST (m))=
                     [0.04,-52.82
                      0.1,-6.47
                      -0.05,6.47
                      0.1,45.36
                      0.04,423.88] NSEG times
                   ( DISTANCE (m), ELEVATION (m))=
                          [-226.24 ,112.50]
```

```
                          [-167.50 ,111.50]
                          [-106.81 ,111.00]
                          [-92.37 ,110.00]
                          [-52.82 ,109.00]
                          [-24.90, 109.00]
                          [-17.02, 108.50]
                          [-6.47, 108.00]
                          [6.47, 108.00]
                          [15.67, 108.50]
                          [18.95, 109.00]
                          [45.36, 109.50]
                          [120.79, 110.00]
                          [145.72, 111.00]
                          [181.56, 111.50]
                          [423.88, 112.50]
*%-----------------|------------------------------------------------------------|
*#
*# Addition of Subwatershed 10 to Node 10
*#
ADD HYD             NHYDsum=["S_N10"], NHYDs to add=["N10"+"SW_10"]
*%-----------------|------------------------------------------------------------|
SAVE HYD            NHYD=["S_N10"],  # OF PCYCLES=[-1],  ICASEsh=[-1]
                    HYD_FILENAME=["H_SN10"]
                    HYD_COMMENT=["flow at S_N10: N10 + SW_10"]
*%-----------------|------------------------------------------------------------|
*# Addition of Kings Creek to S_N10
*#
ADD HYD             NHYDsum=["S_N10A"], NHYDs to add=["S_N10"+"KG_CK"]
*%-----------------|------------------------------------------------------------|
*#
*# Sum of hydrographs from Node 10 routed to Node 9
*# Section 2
*#
ROUTE CHANNEL       NHYDout=["N9"] ,NHYDin=["S_N10A"] ,
                    RDT=[1](min),
                    CHLGTH=[3982](m),  CHSLOPE=[0.0753](%),
                                        FPSLOPE=[0.0753](%),
                    SECNUM=[1.0],       NSEG=[4]
                    ( SEGROUGH, SEGDIST (m))=
                      [0.04,-30.27
                       0.05,-18.42
                      -0.05,18.42
                      0.04,131.58] NSEG times
                    ( DISTANCE (m), ELEVATION (m))=
                          [-446.74, 106.00]
                          [-415.68, 105.50]
                          [-285.40, 105.00]
                          [-173.77, 104.50]
                          [-144.95, 104.00]
                          [-111.18, 103.50]
                          [-94.06, 103.00]
                          [-71.02, 102.50]
                          [-30.27, 102.00]
                          [-19.33, 100.00]
                          [-18.42, 99.50]
                          [18.42, 99.50]
                          [20.77, 100.00]
                          [27.93, 101.00]
                          [52.29, 101.00]
                          [68.80, 101.50]
                          [79.66, 103.00]
                          [91.50, 103.50]
                          [131.58, 104.00]
*%-----------------|------------------------------------------------------------|
*#
*# Addition of Subwatershed 9 and Nichols Creek to Node 9
```

```
*#
ADD HYD             NHYDsum=["S_N9"], NHYDs to add=["N9"+"SW_9"+"NC_CK"]
*%-----------------|-----------------------------------------------------------|
*#
*# Sum of hydrographs from Node 9 routed to Node 8
*# Section 3
*#
ROUTE CHANNEL       NHYDout=["N8"] ,NHYDin=["S_N9"] ,
                    RDT=[1](min),
                    CHLGTH=[2269](m),  CHSLOPE=[0.0882](%),
                                        FPSLOPE=[0.0882](%),
                    SECNUM=[1.0],       NSEG=[3]
                    ( SEGROUGH, SEGDIST (m))=
                      [0.1,-17.99
                      -0.045,17.31
                      0.1,456.58] NSEG times
                    ( DISTANCE (m), ELEVATION (m))=
                          [-201.19,100.50]
                          [-135.21, 100.00]
                          [-94.83, 99.50]
                          [-67.05, 99.00]
                          [-17.99, 98.50]
                          [-16.02, 98.00]
                          [-13.95, 97.50]
                          [13.95, 97.50]
                          [15.64, 98.00]
                          [17.31, 98.50]
                          [162.02, 98.50]
                          [172.89 ,99.00]
                          [314.38, 99.00]
                          [343.78, 99.50]
                          [365.67, 100.00]
                          [376.68, 100.00 ]
                          [393.11, 99.50]
                          [404.97, 99.50]
                          [431.70, 100.00]
                          [456.58, 100.50 ]
*%-----------------|-----------------------------------------------------------|
*#
*# Addition of Subwatershed 8 and Hobb's Drain to Node 8
*#
ADD HYD             NHYDsum=["S_N8"], NHYDs to add=["N8"+"SW_8"+"HB_DR"]
*%-----------------|-----------------------------------------------------------|
*#
*# Sum of hydrographs from Node 8 routed to Node 7
*# Section 4
*#
ROUTE CHANNEL       NHYDout=["N7"] ,NHYDin=["S_N8"],
                    RDT=[1](min),
                    CHLGTH=[3750](m),  CHSLOPE=[0.0533](%),
                                        FPSLOPE=[0.0533](%),
                    SECNUM=[1.0],       NSEG=[3]
                    ( SEGROUGH, SEGDIST (m))=
                      [0.12,-18.11
                      -0.07,17.22
                      0.12,590.05] NSEG times
                    ( DISTANCE (m), ELEVATION (m))=
                          [-433.21, 102.00]
                          [-425.34, 101.50]
                          [-377.56, 101.50]
                          [-366.23, 101.00]
                          [-202.60, 100.50]
                          [-96.25, 99.50]
                          [-68.36 99.00]
                          [-18.11, 98.50]
                          [-13.81, 97.50]
```

```
                          [13.81, 97.50]
                          [17.22, 98.50]
                          [161.95, 98.50]
                          [173.11, 99.00]
                          [314.05, 99.00]
                          [365.52, 100.00]
                          [404.70, 99.50]
                          [476.74, 100.50]
                          [502.31, 101.00]
                          [584.69, 101.00]
                          [585.79, 101.00]
                          [590.05, 102.00]
*%-----------------|-------------------------------------------------------------|
*#
*# Addition of Subwatershed 7 to Node 7
*#
ADD HYD             NHYDsum=["S_N7"], NHYDs to add=["N7"+"SW_7"]
*%-----------------|-------------------------------------------------------------|
SAVE HYD            NHYD=["S_N7"],  # OF PCYCLES=[-1],  ICASEsh=[-1]
                    HYD_FILENAME=["H_SN7"]
                    HYD_COMMENT=["flow at S_N7: N7 + SW_7"]
*%-----------------|-------------------------------------------------------------|
*# Insertion of a reservoir to simulate the effects of the Richmond Fen.
*# Storage area and volumes were estimated from available topo maps.
*# Release rate from fen was assumed to be controlled by the downstream
*# river cross-section for summer conditions.  It is was assumed that for up to
*# 0.75 m of water, the main channel of the river provided the storage.  Above
*# this depth, the wetland starts to signigicantly store water.
*#
ROUTE RESERVOIR     NHYDout=["RES_RF"] ,NHYDin=["S_N7"] ,
                    RDT=[1](min),
                          TABLE of ( OUTFLOW-STORAGE ) values
                                      (cms) - (ha-m)
                          TABLE of ( OUTFLOW-STORAGE ) values
                                      (cms) - (ha-m)
                                    [   0.0 ,     0.0 ]
                                    [0.9051,    2.40]
                                    [2.907,     4.13]
                                    [9.744,     9.18]
                                    [20.304,   14.96]
                                    [34.167,  310.21]
                                    [74.993,  605.46]
                                    [104.876, 900.71]
                                    [140.56, 2892.00]
                                    [225.00, 3615.63]
                                    [   -1  ,  -1  ]  (max twenty pts)
                          NHYDovf=["      "] ,
*%-----------------|-------------------------------------------------------------|
SAVE HYD            NHYD=["RES_RF"],  # OF PCYCLES=[-1],  ICASEsh=[-1]
                    HYD_FILENAME=["H_ResRF"]
                    HYD_COMMENT=["outflow of Richmond Fen"]
*%-----------------|-------------------------------------------------------------|
*#
*# Sum of hydrographs from Node 7 routed to Node 6
*# Section 5
*#
ROUTE CHANNEL       NHYDout=["N6"] ,NHYDin=["RES_RF"] ,
                    RDT=[1](min),
                    CHLGTH=[3056](m),  CHSLOPE=[0.0818](%),
                                        FPSLOPE=[0.0818](%),
                    SECNUM=[1.0],       NSEG=[5]
                    ( SEGROUGH, SEGDIST (m))=
                      [0.025,-70.8
                      0.1,-23.9
                      -0.05,23.9
                      0.06,39.8
```

```
                      0.05,96.3] NSEG times
                    ( DISTANCE (m), ELEVATION (m))=
                                     [-100.8, 97.00]
                                     [-70.8, 96.50]
                                     [-52.0, 96.00]
                                     [-35.1, 95.50]
                                     [-30.6, 95.00]
                                     [-23.9, 94.54]
                                     [23.9, 94.54]
                                     [39.8, 95.00]
                                     [50.4, 95.50]
                                     [93.5, 96.00]
                                     [94.9, 96.50]
                                     [96.3, 97.00]
*%-----------------|------------------------------------------------------------|
*#
*# Addition of Subwatershed 6 and Van Gaal Drain to Node 6
*#
ADD HYD             NHYDsum=["S_N6"], NHYDs to add=["N6"+"SW_6"+"VG_DR"]
*%-----------------|------------------------------------------------------------|
*#
*# Sum of hydrographs from Node 6 routed to Node 5
*# Section 6
*#
ROUTE CHANNEL       NHYDout=["N5"] ,NHYDin=["S_N6"] ,
                    RDT=[1](min),
                    CHLGTH=[1852](m),  CHSLOPE=[0.0540](%),
                                        FPSLOPE=[0.0540](%),
                    SECNUM=[1.0],       NSEG=[3]
                    ( SEGROUGH, SEGDIST (m))=
                      [0.035,-131.59
                      -0.045,48.96
                      0.1,239.04] NSEG times
                    ( DISTANCE (m), ELEVATION (m))=
                                     [-686.30, 94.50]
                                     [-675.70, 94.00]
                                     [-492.52, 93.00]
                                     [-467.28, 94.00]
                                     [-131.59, 94.00]
                                     [-92.79, 92.50]
                                     [-18.06, 91.00]
                                     [18.06, 91.00]
                                     [43.47, 92.50]
                                     [48.96, 94.00]
                                     [177.43, 94.00]
                                     [239.04,94.50]
*%-----------------|------------------------------------------------------------|
*#
*# Addition of Subwatershed 5 and Flowing Creek to Node 5
*#
ADD HYD             NHYDsum=["S_N5"], NHYDs to add=["N5"+"SW_5"+"FL_CK"]
*%-----------------|------------------------------------------------------------|
*#
*# Sum of hydrographs from Node 5 routed to Node 5A
*# Section 7
*#
ROUTE CHANNEL       NHYDout=["N5A"] ,NHYDin=["S_N5"] ,
                    RDT=[1](min),
                    CHLGTH=[556](m),  CHSLOPE=[0.0900](%),
                                        FPSLOPE=[0.0900](%),
                    SECNUM=[1.0],       NSEG=[4]
                    ( SEGROUGH, SEGDIST (m))=
                      [0.04,-41.5
                      0.1,-14.0
                      -0.045,14.0
                      0.1,41.1] NSEG times
```

```
                    ( DISTANCE (m), ELEVATION (m))=
                                 [-275.8, 93.00]
                                 [-248.6, 92.50]
                                 [-237.0, 92.00]
                                 [-219.3, 91.50]
                                 [-202.1, 91.50]
                                 [-186.0, 92.00]
                                 [-129.2, 92.00]
                                 [-117.6, 91.50]
                                 [-100.6, 91.00]
                                 [-41.5, 91.00]
                                 [-20.0, 91.00]
                                 [-14.0, 90.54]
                                 [14.0, 90.54]
                                 [15.3, 91.00]
                                 [17.3, 91.50]
                                 [38.4, 92.00]
                                 [39.8, 92.50]
                                 [41.1, 93.00]
*%-----------------|------------------------------------------------------------|
*#
*# Addition of Subwatershed 5A1 and Subwatershed 5A2 to Node 5A
*#
ADD HYD             NHYDsum=["S_N5A"], NHYDs to add=["N5A"+"SW_5A2"+"SW_5A1"]
*%-----------------|------------------------------------------------------------|
*#
*# Sum of hydrographs from Node 5A routed to Node 4
*# Section 8
*#
ROUTE CHANNEL       NHYDout=["N4"] ,NHYDin=["S_N5A"] ,
                    RDT=[1](min),
                    CHLGTH=[4630](m),  CHSLOPE=[0.0432](%),
                                        FPSLOPE=[0.0432](%),
                    SECNUM=[1.0],       NSEG=[3]
                    ( SEGROUGH, SEGDIST (m))=
                      [0.05,-28.2
                      -0.035,28.2
                      0.05,173.1] NSEG times
                    ( DISTANCE (m), ELEVATION (m))=
                                 [-38.9, 92.00]
                                 [-35.8, 91.50]
                                 [-33.3, 91.00]
                                 [-28.2, 90.50]
                                 [-15.0, 87.48]
                                 [-5.0, 88.34]
                                 [5.0, 86.20]
                                 [15.0, 88.55]
                                 [28.2, 90.50]
                                 [29.7, 91.00]
                                 [46.5, 91.00]
                                 [127.8, 91.00]
                                 [148.7, 91.50]
                                 [173.1, 92.00]
*%-----------------|------------------------------------------------------------|
*#
*# Addition of Subwatershed 4 and Leamy Creek to Node 4
*#
ADD HYD             NHYDsum=["S_N4"], NHYDs to add=["N4"+"SW_4"+"LM_CK"]
SAVE HYD            NHYD=["S_N4"],  # OF PCYCLES=[-1],  ICASEsh=[1]
                    HYD_COMMENT=["flow at S_N4"]
*%-----------------|------------------------------------------------------------|
*#
*# Sum of hydrographs from Node 4 routed to Node 2
*# Section 9
*#
ROUTE CHANNEL       NHYDout=["N2"] ,NHYDin=["S_N4"] ,
```

```
                    RDT=[1](min),
                    CHLGTH=[1667](m),  CHSLOPE=[0.0600](%),
                                        FPSLOPE=[0.0600](%),
                    SECNUM=[1.0],       NSEG=[4]
                    ( SEGROUGH, SEGDIST (m))=
                      [0.1,-28.0
                      -0.04,28.4
                      0.06,31.7
                      0.04,80.2] NSEG times
                    ( DISTANCE (m), ELEVATION (m))=
                           [-36.3, 92.00]
                           [-32.6, 91.50]
                           [-30.2, 91.00]
                           [-28.0, 90.45]
                           [-15.0, 87.48]
                           [-5.0, 88.34]
                           [5.0, 86.20]
                           [15.0, 88.55]
                           [28.0, 90.45]
                           [28.4, 90.50]
                           [30.4, 91.00]
                           [31.7, 91.50]
                           [80.2, 92.00]
*%-----------------|------------------------------------------------------------|
*#
*# Addition of Subwatershed 2 with Monohan Drain and Smith Drain to Node 2
*#
ADD HYD             NHYDsum=["S_N2"], NHYDs to add=["N2"+"SW_2"+"SM_DR"+"MO_DR"]
*%-----------------|------------------------------------------------------------|
SAVE HYD            NHYD=["S_N2"],  # OF PCYCLES=[-1],  ICASEsh=[-1]
                    HYD_FILENAME=["H_SN2"]
                    HYD_COMMENT=["flow at S_N2 Jock River Gauge at Moodie Dr."]
*%-----------------|------------------------------------------------------------|
*#
*# Sum of hydrographs from Node 2 routed to Node 1
*# Section 10
*#
*#*****************************************************************************
*%READ HYD            NHYD=["S_N2"],
*%                   HYD_FILENAME=["H-S_N2"]
*%-----------------|------------------------------------------------------------|
*#
*# Hydrograph from Node 2 routed to Node 416
*# Channel X-Section obtained from RVCA Hydraulic Model - Station 9025
*#
ROUTE CHANNEL       NHYDout=["N_416"] ,NHYDin=["S_N2"] ,
                    RDT=[1](min),
                    CHLGTH=[2327](m),  CHSLOPE=[0.0498](%),
                                        FPSLOPE=[0.0498](%),
                    SECNUM=[1.0],       NSEG=[3]
                    ( SEGROUGH, SEGDIST (m))=
                      [0.075,-23.96
                      -0.055,23.96
                      0.075,157.38]  NSEG times
                    ( DISTANCE (m), ELEVATION (m))=
                    [-336.97,93.5]
                    [-318.85,93]
                    [-259,92.5]
                    [-133.18,92]
                    [-33.17,92]
                    [-27.21,92]
                    [-26.14,91.5]
                    [-24.99,91]
                    [-23.96,90.5]
                    [-14.33,88.26]
                    [-0.68,88.12]
```

```
                    [14.33,88.26]
                    [23.96,90.5]
                    [32.12,91]
                    [43.74,91.5]
                    [57.09,92]
                    [73.53,92.5]
                    [108.27,93]
                    [125.88,93.5]
                    [144.81,94]
                    [157.38,94.5]
*%-----------------|-------------------------------------------------------------|
*#******************************************************************************
*#    Catchment SW-1a
*#    - Portion of RVCA catchment SW_1 outside of Reach 1 subwatershed
*#    - Undeveloped agricultural land
*#******************************************************************************
CONTINUOUS NASHYD   NHYD=["SW_1a"], DT=[1]min, AREA=[536.42](ha),
                    DWF=[0](cms), CN/C=[72],  IA=[4.67](mm),
                    N=[3], TP=[2.79]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-------------------------------------------------------------|
*   -JFSA 2021-02-25  "S-1-Okeefe" is a part of S-1 sub-catchment. It is moved to drain
before station 7245 on Jock River
CONTINUOUS STANDHYD NHYD=["S-1-Okeefe"], DT=[1](min), AREA=[44.93](ha), XIMP=[0.65],
TIMP=[0.65], DWF=[0](cms),
                    LOSS=[2], SCS curve number CN=[75], Pervious surfaces:
                    IAper=[4.67](mm), SLPP=[2.0](%),
                    LGP=[40](m), MNP=[0.25], SCP=[0](min), Impervious surfaces:
                    IAimp=[1.57](mm), SLPI=[0.75](%),
                    LGI=[547.296](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs),   END=-1
*%-----------------|-------------------------------------------------------------|
COMPUTE DUALHYD     NHYDin=["S-1-Okeefe"], CINLET=[4.591](cms), NINLET=[1],
                    MajNHYD=["S-1-OkMJ"]
                    MinNHYD=["S-1-OkMN"]
                    TMJSTO=[9999999](cu-m)
*%-----------------|-------------------------------------------------------------|
ADD HYD             NHYDsum=["S-1-OkS"], NHYDs to add=["S-1-OkMJ"+"S-1-OkMN"]
*%-----------------|-------------------------------------------------------------|
ROUTE RESERVOIR     NHYDout=["S-1-OkSR"] ,NHYDin=["S-1-OkS"] ,
                    RDT=[1](min),
                          TABLE of ( OUTFLOW-STORAGE ) values
                                      (cms) - (ha-m)
                                    [ 0.0     , 0.0 ]
                                    [ 0.5370, 1.7917 ]
                                    [    -1  ,  -1    ]  (max twenty pts)
                          NHYDovf=["S-1-OkSovf"]
*%-----------------|-------------------------------------------------------------|
ADD HYD             NHYDsum=["SN_416"], NHYDs to
add=["N_416"+"SW_1a"+"S-1-OkSR"+"S-1-OkSovf"]
*%-----------------|-------------------------------------------------------------|
SAVE HYD            NHYD=["SN_416"],   # OF PCYCLES=[-1],  ICASEsh=[1]
                    HYD_COMMENT=["Total Flows at Highway 416 before Station 7245"]
*%-----------------|-------------------------------------------------------------|
*#
*# Hydrograph from Node 416 routed to Node at Okeefe drain
```

```
*# Channel X-Section obtained from RVCA Hydraulic Model - Station 7245
*#
ROUTE CHANNEL        NHYDout=["N_OK"] ,NHYDin=["SN_416"] ,
                     RDT=[1](min),
                     CHLGTH=[497](m),  CHSLOPE=[0.3018](%),
                                         FPSLOPE=[0.3018](%),
                     SECNUM=[1.0],       NSEG=[3]
                     ( SEGROUGH, SEGDIST (m))=
                       [0.075,-19.40
                       -0.055,19.40
                       0.075,377.02] NSEG times
                     ( DISTANCE (m), ELEVATION (m))=
                     [-1061.41, 92.50]
                     [-945.91, 92.00]
                     [-783.64, 91.50]
                     [-136.74, 91.00]
                     [-86.04, 91.00]
                     [-20.86, 91.00]
                     [-20.18, 90.50]
                     [-19.40, 90.00]
                     [-11.68, 86.89]
                     [0.00, 86.10]
                     [12.09, 86.81]
                     [19.40, 90.00]
                     [34.68, 90.50]
                     [60.56, 91.00]
                     [170.14, 91.00]
                     [175.05, 90.50]
                     [180.29, 90.00]
                     [193.41, 90.00]
                     [195.98, 90.50]
                     [377.02, 92.50]
*%-----------------|-----------------------------------------------------------|
*#*****************************************************************************
*#    Catchment OKEEFE
*#    - To O'Keefe drain (north of the Jock)
*#    - Developed with assumed 43% imp.
*#    - 2020-12-01 add Okeefe model (Area 513.02 HA) instead of current Okeefe (Area 513.02 HA)
*#    - 2020-11-20 Okeefe detailed model was added as per the NOVATECH SWMHYMO model (Citi-Gate 2014).
*%-----------------|-----------------------------------------------------------|
*POST DEVELOPMENT CONDITIONS
*%-----------------|-----------------------------------------------------------|
*#*****************************************************************************
CONTINUOUS NASHYD    NHYD=["O-1"], DT=[1]min, AREA=[63.72](ha),
                     DWF=[0](cms), CN/C=[61], IA=[6.2](mm), N=[3], TP=[.9]hrs,
                     Continuous simulation parameters:
                     IaRECper=[4](hrs),
                     SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                     InterEventTime=[12](hrs)
                     Baseflow simulation parameters:
                     BaseFlowOption=[1] ,
                     InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                     VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-------------------------------------------------------------------------------------------------|
*ROUTE FLOW THROUGH AREA 0-2
ROUTE CHANNEL        NHYDout=["O-1R"], NHYDin=["O-1"], RDT=[1](min),
                     CHLGTH=[960](m), CHSLOPE=[0.63](%), FPSLOPE=[0.63](%),
                     SECNUM=[1], NSEG=[3]
                     ( SEGROUGH, SEGDIST (m))=[0.06,4 -.043,6 0.06,10] NSEG times
                     ( DISTANCE (m), ELEVATION (m))=[0.00, 2.0]
                     [0.0, 2.0]
                     [4.0, 0.0]
                     [6.0, 0.0]
```

```
                    [10.0, 2.0]
*%-----------------|-------------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["O-2"], DT=[1]min, AREA=[28.61](ha),
                    DWF=[0](cms), CN/C=[57], IA=[5.2](mm), N=[3], TP=[1.1]hrs,
                   Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-------------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["O-4"], DT=[1]min, AREA=[46.94](ha),
                    DWF=[0](cms), CN/C=[49], IA=[9.2](mm), N=[3], TP=[0.9]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-------------------------------------------------------------|
*TOTAL EXTERNAL FLOW NORTH OF O'KEEFE CT. CROSSING
ADD HYD             NHYDsum=["OKF-N"], NHYDs to add=["O-1R"+"O-2"+"O-4"]
*%-----------------|-------------------------------------------------------------|
*ROUTE FLOW THROUGH AREA O-6
ROUTE CHANNEL       ROUTE CHANNEL NHYDout=["OKF-NR"], NHYDin=["OKF-N"], RDT=[1](min),
                    CHLGTH=[210](m), CHSLOPE=[.81](%), FPSLOPE=[.81](%),
                    SECNUM=[1], NSEG=[3]
                    ( SEGROUGH, SEGDIST (m))=[0.043,22.43 -0.043,25.07
                    0.043,45.54] NSEG times
                    ( DISTANCE (m), ELEVATION (m))=[0.00, 3.73]
                    (14.62, 1.56)
                    (18.41, 1.44)
                    (22.43, 0.00)
                    (25.07, 0.70)
                    (29.10, 1.79)
                    (33.73, 2.71)
                    (45.54, 3.58)
*%-----------------|-------------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["O-6"], DT=[1]min, AREA=[16.46](ha),
                    DWF=[0](cms), CN/C=[43], IA=[9.2](mm), N=[3], TP=[0.7]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-------------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["O-3"], DT=[1](min), AREA=[39.67](ha), XIMP=[0.15],
TIMP=[0.30], DWF=[0](cms),
                    LOSS=[2], SCS curve number CN=[50], Pervious surfaces:
                    IAper=[4.67](mm), SLPP=[0.32](%),
                    LGP=[440](m), MNP=[0.035], SCP=[0](min), Impervious surfaces:
                    IAimp=[1.57](mm), SLPI=[0.32](%),
                    LGI=[1880](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs),   END=-1
*%-----------------|-------------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["O-5"], DT=[1](min), AREA=[60.63](ha), XIMP=[0.13],
```

```
TIMP=[0.26], DWF=[0](cms),
                    LOSS=[2], SCS curve number CN=[61],
                    Pervious surfaces: IAper=[4.67](mm), SLPP=[1.38](%),
                    LGP=[550](m), MNP=[0.035], SCP=[0](min), Impervious surfaces:
                    IAimp=[1.57](mm), SLPI=[1.38](%),
                    LGI=[1450](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs),   END=-1
*%-----------------|-------------------------------------------------------------|
*TOTAL EXTERNAL FLOWS WEST OF THE SITE AND NORTH OF O'KEEFE CRT
*%-----------------|-------------------------------------------------------------|
ADD HYD             NHYDsum=["PT1"], NHYDs to add=["OKF-NR"+"O-3"+"O-5"+"O-6"]
*%-----------------|-------------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["O-7"], DT=[1]min, AREA=[5.28](ha),
                    DWF=[0](cms), CN/C=[54], IA=[7.5](mm), N=[3], TP=[0.6]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-------------------------------------------------------------|
*ANALYSIS POINT 1 - TOTAL FLOW NORTH OF FALLOWFIELD DR. AND O'KEEFE CRT.
ADD HYD             NHYDsum=["FF"], NHYDs to add=["PT1"+"O-7"]
*%-----------------|-------------------------------------------------------------|
*ROUTE FLOW through O'Keefe Drain 1
ROUTE CHANNEL       NHYDout=["DRAIN1"], NHYDin=["FF"], RDT=[1](min),
                    CHLGTH=[302]{m), CHSLOPE=[1.00](%), FPSLOPE=[1.00](%),
                    SECNUM=[1], NSEG=[3]
                    ( SEGROUGH, SEGDIST (m))=[0.07,13.45 -0.043,16.55 0.07,30.00] NSEG
                    times
                    ( DISTANCE (m), ELEVATION (m))=[0.00, 1.70]
                    (3.45, 0.60)
                    (13.45, 0.50)
                    (14.45, 0.00)
                    (15.55, 0.00)
                    (16.55, 0.50)
                    (26.55, 0.60)
                    (30.00, 1.70)
*%-----------------|-------------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["D1"], DT=[1]min, AREA=[1.17](ha),
                    DWF=[0](cms), CN/C=[84], IA=[9.0](mm), N=[3], TP=[0.28]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-------------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["A1"], DT=[1]min, AREA=[2.50](ha), XIMP=[0.68], TIMP=[0.85],
DWF=[0](cms), LOSS=[1]:
                    Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                    F=[0.00](mm),
                    Pervious   areas: IAper=[4.67](mm), SLPP=[0.5](%), LGP=[50](m),
                    MNP=[0.250], SCP=[0](min),
                    Impervious areas: IAimp=[1.57](mm), SLPI=[0.5](%),
                    LGI=[223.607](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                    END=-1
```

```
*%-----------------|--------------------------------------------------------------|
ROUTE RESERVOIR     NHYDout=["A1-STR"], NHYDin=["A1"], RDT=[1](min),
                         TABLE of ( OUTFLOW-STORAGE ) values
                                   (cms) - (ha-m)
                                 [ 0.000 , 0.000 ]
                                 [ 0.035 , 0.038 ]
                                 [ 0.072 , 0.051 ]
                                 [ 0.100 , 0.059 ]
                                 [ 0.125 , 0.070 ]
                                 [ 0.160 , 0.074 ]
                                 [ 0.185 , 0.081 ]
                                 [ -1 , -1 ] (max twenty pts)
                                 NHYDovf=["A1-OVF"]
*%-----------------|--------------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["ST-2"], DT=[1]min, AREA=[0.59](ha), XIMP=[0.46],
TIMP=[0.57], DWF=[0](cms), LOSS=[1]:
                    Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                    F=[0.00](mm),
                    Pervious   areas: IAper=[4.67](mm), SLPP=[0.5](%), LGP=[50](m),
                    MNP=[0.250], SCP=[0](min),
                    Impervious areas: IAimp=[1.57](mm), SLPI=[0.5](%),
                    LGI=[108.628](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                    END=-1
*%-----------------|--------------------------------------------------------------|
ROUTE RESERVOIR     NHYDout=["ST2STR"], NHYDin=["ST-2"], RDT=[1](min),
                         TABLE of ( OUTFLOW-STORAGE ) values
                                   (cms) - (ha-m)
                                 [ 0.000 , 0.0000 ]
                                 [ 0.052 , 0.0010 ]
                                 [ 0.053 , 0.0080 ]
                                 [ -1 , -1 ] (max twenty pts)
                                 NHYDovf=["ST2OVF"]
*%-----------------|--------------------------------------------------------------|
*%-----------------|--------------------------------------------------------------|
*TOTAL FLOW NORTH OF STRANDHERD DR. (EAST BRANCH) CROSSING
*%-----------------|--------------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["O-8"], DT=[1]min, AREA=[60.55](ha),
                    DWF=[0](cms), CN/C=[69], IA=[4.0](mm), N=[3], TP=[1.0]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|--------------------------------------------------------------|
ROUTE PIPE          PTYPE=[2]rect, NHYDout=["O8PIPE"], RNUMBER=[1], PWIDTH=[1800](mm),
PHEIGHT=[1200](mm), PLNGTH=[335.1](m),
                    PROUGH=[0.013], PSLOPE=[0.001](m/m), NHYDin=["O-8"], RDT=[1](min)
*%-----------------|--------------------------------------------------------------|
*%-----------------|--------------------------------------------------------------|
ADD HYD             NHYDsum=["ST2-IN"], NHYDs to
add=["DRAIN1"+"D1"+"A1-STR"+"A1-OVF"+"ST2STR"+"ST2OVF"+"O8PIPE"]
*%-----------------|--------------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["A7"], DT=[1]min, AREA=[3.51](ha), XIMP=[0.68], TIMP=[0.85],
DWF=[0](cms), LOSS=[1]:
                    Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                    F=[0.00](mm),
                    Pervious   areas: IAper=[4.67](mm), SLPP=[0.5](%), LGP=[50](m),
                    MNP=[0.250], SCP=[0](min),
                    Impervious areas: IAimp=[1.57](mm), SLPI=[0.5](%),
                    LGI=[264.953](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
```

```
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                    END=-1
*%-----------------|-------------------------------------------------------------|
ROUTE RESERVOIR     NHYDout=["A7-STR"], NHYDin=["A7"], RDT=[1](min),
                         TABLE of ( OUTFLOW-STORAGE ) values
                                   (cms) - (ha-m)
                                 [ 0.000 , 0.000 ]
                                 [ 0.049 , 0.054 ]
                                 [ 0.102 , 0.072 ]
                                 [ 0.140 , 0.082 ]
                                 [ 0.175 , 0.099 ]
                                 [ 0.225 , 0.105 ]
                                 [ 0.260 , 0.114 ]
                                 [ -1 , -1 ] (max twenty pts)
                                 NHYDovf=["A7-OVF"]
*%-----------------|-------------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["ST-3"], DT=[1]min, AREA=[0.71](ha), XIMP=[0.46],
TIMP=[0.57], DWF=[0](cms), LOSS=[1]:
                    Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                    F=[0.00](mm),
                    Pervious   areas: IAper=[4.67](mm), SLPP=[0.5](%), LGP=[50](m),
                    MNP=[0.250], SCP=[0](min),
                    Impervious areas: IAimp=[1.57](mm), SLPI=[0.5](%),
                    LGI=[119.164](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                    END=-1
*%-----------------|-------------------------------------------------------------|
ROUTE RESERVOIR     NHYDout=["ST3STR"], NHYDin=["ST-3"], RDT=[1](min),
                         TABLE of ( OUTFLOW-STORAGE ) values
                                   (cms) - (ha-m)
                                 [ 0.000 , 0.0000 ]
                                 [ 0.063 , 0.0010 ]
                                 [ 0.064 , 0.0094 ]
                                 [ -1 , -1 ] (max twenty pts)
                                 NHYDovf=["ST3OVF"]
*%-----------------|-------------------------------------------------------------|
*ANALYSIS POINT 2 - TOTAL FLOW AT OUTLET OF STREET 2/3 INTERSECTION
*%-----------------|-------------------------------------------------------------|
ADD HYD             NHYDsum=["PT2ST3"], NHYDs to
add=["ST2-IN"+"A7-STR"+"A7-OVF"+"ST3STR"+"ST3OVF"]
*%-----------------|-------------------------------------------------------------|
*ROUTE FLOW through O'Keefe Drain 2
ROUTE CHANNEL       NHYDout=["DRAIN2"], NHYDin=["PT2ST3"], RDT=[1](min),
                    CHLGTH=[592]{m), CHSLOPE=[.23](%), FPSLOPE=[.23](%),
                                        SECNUM=[1], NSEG=[3]
                    ( SEGROUGH, SEGDIST (m))=[0.07,12.60 -0.043,17.40 0.07,30.00] NSEG
                    times
                    ( DISTANCE (m), ELEVATION (m))=[0.00, 1.70]
                    (2.60, 0.95)
                    (12.60, 0.75)
                    (14.10, 0.00)
                    (15.90, 0.00)
                    (17.40, 0.75)
                    (27.40, 0.95)
                    (30.00, 1.70)
*%-----------------|-------------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["D2"], DT=[1]min, AREA=[2.28](ha), DWF=[0](cms), CN/C=[84],
IA=[9.0](mm),
                    N=[3], TP=[0.99]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
```

```
                       InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                       VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["A17"], DT=[1]min, AREA=[12.04](ha), XIMP=[0.68],
TIMP=[0.85], DWF=[0](cms), LOSS=[1]:
                       Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                       F=[0.00](mm),
                       Pervious   areas: IAper=[4.67](mm), SLPP=[0.5](%), LGP=[50](m),
                       MNP=[0.250], SCP=[0](min),
                       Impervious areas: IAimp=[1.57](mm), SLPI=[0.5](%),
                       LGI=[490.714](m), MNI=[0.013], SCI=[0](min),
                       Continuous simulation parameters:
                       IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                       END=-1
*%-----------------|-----------------------------------------------------------|
ROUTE RESERVOIR        NHYDout=["A17STR"], NHYDin=["A17"], RDT=[1](min),
                            TABLE of ( OUTFLOW-STORAGE ) values
                                      (cms) - (ha-m)
                                    [ 0.000 , 0.000 ]
                                    [ 0.169 , 0.185 ]
                                    [ 0.349 , 0.248 ]
                                    [ 0.482 , 0.283 ]
                                    [ 0.602 , 0.338 ]
                                    [ 0.771 , 0.359 ]
                                    [ 0.891 , 0.391 ]
                                    [ -1 , -1 ] (max twenty pts)
                                    NHYDovf=["A17OVF"]
*%-----------------|-----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["ST-4"], DT=[1]min, AREA=[0.35](ha), XIMP=[0.46],
TIMP=[0.57], DWF=[0](cms), LOSS=[1]:
                       Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                       F=[0.00](mm),
                       Pervious   areas: IAper=[4.67](mm), SLPP=[0.5](%), LGP=[50](m),
                       MNP=[0.250], SCP=[0](min),
                       Impervious areas: IAimp=[1.57](mm), SLPI=[0.5](%), LGI=[83.666](m),
                       MNI=[0.013], SCI=[0](min),
                       Continuous simulation parameters:
                       IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                       END=-1
*%-----------------|-----------------------------------------------------------|
ROUTE RESERVOIR        NHYDout=["ST4STR"], NHYDin=["ST-4"], RDT=[1](min),
                            TABLE of ( OUTFLOW-STORAGE ) values
                                      (cms) - (ha-m)
                                    [ 0.000 , 0.0000 ]
                                    [ 0.031 , 0.0010 ]
                                    [ 0.032 , 0.0050 ]
                                    [ -1 , -1 ] (max twenty pts)
                                    NHYDovf=["ST4OVF"]
*%-----------------|-----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["A18"], DT=[1]min, AREA=[5.30](ha), XIMP=[0.68], TIMP=[0.85],
DWF=[0](cms), LOSS=[1]:
                       Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                       F=[0.00](mm),
                       Pervious   areas: IAper=[4.67](mm), SLPP=[0.5](%), LGP=[50](m),
                       MNP=[0.250], SCP=[0](min),
                       Impervious areas: IAimp=[1.57](mm), SLPI=[0.5](%),
                       LGI=[325.576](m), MNI=[0.013], SCI=[0](min),
                       Continuous simulation parameters:
                       IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                       END=-1
*%-----------------|-----------------------------------------------------------|
ROUTE RESERVOIR        NHYDout=["A18STR"], NHYDin=["A18"], RDT=[1](min),
                            TABLE of ( OUTFLOW-STORAGE ) values
                                      (cms) - (ha-m)
                                    [ 0.000 , 0.000 ]
                                    [ 0.074 , 0.082 ]
```

```
                                  [ 0.154 , 0.109 ]
                                  [ 0.212 , 0.125 ]
                                  [ 0.265 , 0.149 ]
                                  [ 0.339 , 0.158 ]
                                  [ 0.392 , 0.172 ]
                                  [ -1 , -1 ] (max twenty pts)
                                  NHYDovf=["A18OVF"]
*%-----------------|-------------------------------------------------------------|
*ANALYSIS POINT 3 - TOTAL FLOW AT OUTLET OF STREET 4
*%-----------------|-------------------------------------------------------------|
ADD HYD             NHYDsum=["PT3ST4"], NHYDs to
add=["DRAIN2"+"D2"+"A17STR"+"A17OVF"+"ST4STR"+"ST4OVF"+"A18STR"+"A18OVF"]
*%-----------------|-------------------------------------------------------------|
*ROUTE FLOW through O'Keefe Drain 3
ROUTE CHANNEL       NHYDout=["DRAIN3"], NHYDin=["PT3ST4"], RDT=[1](min),
                    CHLGTH=[525]{m), CHSLOPE=[.23](%), FPSLOPE=[.23](%),
                    SECNUM=[1], NSEG=[3]
                    ( SEGROUGH, SEGDIST (m))=[0.07,12.50 -0.043,17.50 0.07,30.00] NSEG
                    times
                    ( DISTANCE (m), ELEVATION (m))=[0.00, 1.70]
                    (2.50, 1.00)
                    (12.50, 0.80)
                    (14.10, 0.00)
                    (15.90, 0.00)
                    (17.50, 0.80)
                    (27.50, 1.00)
                    (30.00, 1.70)
*%-----------------|-------------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["D3"], DT=[1]min, AREA=[2.51](ha),
                    DWF=[0](cms), CN/C=[86], IA=[8.7](mm), N=[3], TP=[0.73]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-------------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["C1"], DT=[1]min, AREA=[3.41](ha), XIMP=[0.68], TIMP=[0.85],
DWF=[0](cms), LOSS=[1]:
                    Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                    F=[0.00](mm),
                    Pervious   areas: IAper=[4.67](mm), SLPP=[0.5](%), LGP=[50](m),
                    MNP=[0.250], SCP=[0](min),
                    Impervious areas: IAimp=[1.57](mm), SLPI=[0.5](%),
                    LGI=[261.151](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                    END=-1
*%-----------------|-------------------------------------------------------------|
ROUTE RESERVOIR     NHYDout=["C1-STR"], NHYDin=["C1"], RDT=[1](min),
                         TABLE of ( OUTFLOW-STORAGE ) values
                                   (cms) - (ha-m)
                                  [ 0.000 , 0.000 ]
                                  [ 0.048 , 0.052 ]
                                  [ 0.099 , 0.070 ]
                                  [ 0.136 , 0.080 ]
                                  [ 0.170 , 0.096 ]
                                  [ 0.218 , 0.102 ]
                                  [ 0.252 , 0.111 ]
                                  [ -1 , -1 ] (max twenty pts)
                                  NHYDovf=["C1-OVF"]
*%-----------------|-------------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["ST-5"], DT=[1]min, AREA=[0.45](ha), XIMP=[0.46],
TIMP=[0.57], DWF=[0](cms), LOSS=[1]:
```

```
                    Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                    F=[0.00](mm),
                    Pervious   areas: IAper=[4.67](mm), SLPP=[0.5](%), LGP=[50](m),
                    MNP=[0.250], SCP=[0](min),
                    Impervious areas: IAimp=[1.57](mm), SLPI=[0.5](%), LGI=[94.868](m),
                    MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                    END=-1
*%-----------------|-----------------------------------------------------------|
ROUTE RESERVOIR     NHYDout=["ST5STR"], NHYDin=["ST-5"], RDT=[1](min),
                         TABLE of ( OUTFLOW-STORAGE ) values
                                   (cms) - (ha-m)
                                 [ 0.000 , 0.0000 ]
                                 [ 0.040 , 0.0010 ]
                                 [ 0.041 , 0.0062 ]
                                 [ -1 , -1 ] (max twenty pts)
                                 NHYDovf=["ST5OVF"]
*%-----------------|-----------------------------------------------------------|
ADD HYD             NHYDsum=["ST5-E"], NHYDs to
add=["DRAIN3"+"D3"+"C1-STR"+"C1-OVF"+"ST5STR"+"ST5OVF"]
*%-----------------|-----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["STRAND"], DT=[1](min), AREA=[7.59](ha),
                    XIMP=[0.64], TIMP=[0.85], DWF=[0](cms), LOSS=[1]:
                    Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                    F=[0.00](mm),
                    Pervious   areas: IAper=[4.67](mm), SLPP=[0.5](%), LGP=[40](m),
                    MNP=[0.250], SCP=[0](min),
                    Impervious areas: IAimp=[1.57](mm), SLPI=[0.5](%), LGI=[1230](m),
                    MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                    END=-1
*%-----------------|-----------------------------------------------------------|
ROUTE RESERVOIR     NHYDout=["S-POND"], NHYDin=["STRAND"], RDT=[1](min),
                         TABLE of ( OUTFLOW-STORAGE ) values
                                   (cms) - (ha-m)
                                 [ 0.000 , 0.000 ]
                                 [ 0.033 , 0.188 ]
                                 [ 0.057 , 0.253 ]
                                 [ 0.104 , 0.287 ]
                                 [ 0.160 , 0.336 ]
                                 [ 0.340 , 0.346 ]
                                 [ 0.471 , 0.360 ]
                                 [ 0.824 , 0.390 ]
                                 [ -1 , -1 ] (max twenty pts)
                                 NHYDovf=["S-OVF"]
*%-----------------|-----------------------------------------------------------|
ADD HYD             NHYDsum=["SSAOUT"], NHYDs to add=["ST5-E"+"S-POND"+"S-OVF"]
*%-----------------|-----------------------------------------------------------|
SAVE HYD            NHYD=["SSAOUT"], # OF PCYCLES=[5], ICASEsh=[1]
                    HYD_COMMENT=["SSAOUT"]
*%-----------------|-----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["Area-A"], DT=[1]min, AREA=[66.75](ha), XIMP=[0.64],
TIMP=[0.80], DWF=[0](cms), LOSS=[1]:
                    Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                    F=[0.00](mm),
                    Pervious   areas: IAper=[4.67](mm), SLPP=[0.5](%), LGP=[50](m),
                    MNP=[0.250], SCP=[0](min),
                    Impervious areas: IAimp=[1.57](mm), SLPI=[0.5](%),
                    LGI=[1155.422](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                    END=-1
*%-----------------|-----------------------------------------------------------|
SAVE HYD            NHYD=["Area-A"], # OF PCYCLES=[1], ICASEsh=[1]
```

```
                    HYD_COMMENT=["SMWF-A Inflow"]
*%-----------------|-----------------------------------------------------------|
ROUTE RESERVOIR     NHYDout=["SWMF-A"], NHYDin=["Area-A"], RDT=[1](min),
                         TABLE of ( OUTFLOW-STORAGE ) values
                                   (cms) - (ha-m)
                                 [ 0.000 , 0.000 ]
                                 [ 0.103 , 1.077 ]
                                 [ 0.128 , 1.749 ]
                                 [ 0.382 , 2.282 ]
                                 [ 0.703 , 2.582 ]
                                 [ 1.256 , 2.978 ]
                                 [ 1.567 , 3.202 ]
                                 [ 1.955 , 3.493 ]
                                 [ 2.100 , 3.600 ]
                                 [ -1 , -1 ] (max twenty pts)
                                 NHYDovf=["SWMAOV"]
*%-----------------|-----------------------------------------------------------|
SAVE HYD            NHYD=["SWMF-A"], # OF PCYCLES=[1], ICASEsh=[1]
                    HYD_COMMENT=["SMWF-A Outflow"]
*%-----------------|-----------------------------------------------------------|
*ANALYSIS POINT 4 - TOTAL FLOW AT OUTLET OF STREET 5
*%-----------------|-----------------------------------------------------------|
ADD HYD             NHYDsum=["PT4ST5"], NHYDs to add=["SSAOUT"+"SWMF-A"+"SWMAOV"]
*%-----------------|-----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["C6"], DT=[1]min, AREA=[1.87](ha), XIMP=[0.68], TIMP=[0.85],
DWF=[0](cms), LOSS=[1]:
                    Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                    F=[0.00](mm),
                    Pervious   areas: IAper=[4.67](mm), SLPP=[0.5](%), LGP=[50](m),
                    MNP=[0.250], SCP=[0](min),
                    Impervious areas: IAimp=[1.57](mm), SLPI=[0.5](%),
                    LGI=[193.391](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                    END=-1
*%-----------------|-----------------------------------------------------------|
ROUTE RESERVOIR     NHYDout=["C6-STR"], NHYDin=["C6"], RDT=[1](min),
                         TABLE of ( OUTFLOW-STORAGE ) values
                                   (cms) - (ha-m)
                                 [ 0.000 , 0.000 ]
                                 [ 0.026 , 0.029 ]
                                 [ 0.054 , 0.038 ]
                                 [ 0.075 , 0.044 ]
                                 [ 0.093 , 0.052 ]
                                 [ 0.120 , 0.056 ]
                                 [ 0.138 , 0.061 ]
                                 [ -1 , -1 ] (max twenty pts)
                                 NHYDovf=["C6-OVF"]
*%-----------------|-----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["C7"], DT=[1]min, AREA=[1.62](ha), XIMP=[0.68], TIMP=[0.85],
DWF=[0](cms), LOSS=[1]:
                    Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                    F=[0.00](mm),
                    Pervious   areas: IAper=[4.67](mm), SLPP=[0.5](%), LGP=[50](m),
                    MNP=[0.250], SCP=[0](min),
                    Impervious areas: IAimp=[1.57](mm), SLPI=[0.5](%),
                    LGI=[180.000](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                    END=-1
*%-----------------|-----------------------------------------------------------|
ROUTE RESERVOIR     NHYDout=["C7-STR"], NHYDin=["C7"], RDT=[1](min),
                         TABLE of ( OUTFLOW-STORAGE ) values
                                   (cms) - (ha-m)
                                 [ 0.000 , 0.000 ]
                                 [ 0.023 , 0.025 ]
```

```
                                  [ 0.047 , 0.033 ]
                                  [ 0.065 , 0.038 ]
                                  [ 0.081 , 0.045 ]
                                  [ 0.104 , 0.048 ]
                                  [ 0.120 , 0.053 ]
                                  [ -1 , -1 ] (max twenty pts)
                                  NHYDovf=["C7-OVF"]
*%-----------------|------------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["ST-6"], DT=[1]min, AREA=[0.41](ha),XIMP=[0.46], TIMP=[0.57],
DWF=[0](cms), LOSS=[1]:
                    Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                    F=[0.00](mm),
                    Pervious   areas: IAper=[4.67](mm), SLPP=[0.5](%), LGP=[50](m),
                    MNP=[0.250], SCP=[0](min),
                    Impervious areas: IAimp=[1.57](mm), SLPI=[0.5](%), LGI=[90.554](m),
                    MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                    END=-1
*%-----------------|------------------------------------------------------------|
ROUTE RESERVOIR     NHYDout=["ST6STR"], NHYDin=["ST-6"], RDT=[1](min),
                         TABLE of ( OUTFLOW-STORAGE ) values
                                    (cms) - (ha-m)
                                  [ 0.000 , 0.0000 ]
                                  [ 0.036 , 0.0010 ]
                                  [ 0.037 , 0.0058 ]
                                  [ -1 , -1 ] (max twenty pts)
                                  NHYDovf=["ST6OVF"]
*%-----------------|------------------------------------------------------------|
*ANALYSIS POINT 5 - TOTAL FLOW AT OUTLET OF STREET 6
*%-----------------|------------------------------------------------------------|
ADD HYD             NHYDsum=["PT5ST6"], NHYDs to
add=["PT4ST5"+"C6-STR"+"C6-OVF"+"C7-STR"+"C7-OVF"+"ST6STR"+"ST6OVF"]
*%-----------------|------------------------------------------------------------|
*ROUTE FLOW through O'Keefe Drain 4
ROUTE CHANNEL       NHYDout=["DRAIN4"], NHYDin=["PT5ST6"], RDT=[1](min),
                    CHLGTH=[324]{m), CHSLOPE=[.10](%), FPSLOPE=[.10](%),
                    SECNUM=[1], NSEG=[3]
                    ( SEGROUGH, SEGDIST (m))=[0.07,12.00 -0.043,18.00 0.07,30.00] NSEG
                    times
                    ( DISTANCE (m), ELEVATION (m))=[0.00, 2.00]
                    (2.00, 1.20)
                    (12.00, 1.00)
                    (14.00, 0.00)
                    (16.00, 0.00)
                    (18.00, 1.00)
                    (28.00, 1.20)
                    (30.00, 2.00)
*%-----------------|------------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["D4"], DT=[1]min, AREA=[1.73](ha), DWF=[0](cms), CN/C=[88],
IA=[8.4](mm),
                    N=[3], TP=[0.60]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|------------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["Area-B"], DT=[1]min, AREA=[24.04](ha), XIMP=[0.62],
TIMP=[0.77], DWF=[0](cms), LOSS=[1]:
                    Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                    F=[0.00](mm),
                    Pervious   areas: IAper=[4.67](mm), SLPP=[1.4](%), LGP=[50](m),
```

```
                         MNP=[0.250], SCP=[0](min),
                         Impervious areas: IAimp=[1.57](mm), SLPI=[1.4](%),
                         LGI=[693.397](m), MNI=[0.013], SCI=[0](min),
                         Continuous simulation parameters:
                         IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                         END=-1
*%-----------------|------------------------------------------------------------|
ROUTE RESERVOIR          NHYDout=["SWMF-B"], NHYDin=["Area-B"], RDT=[1](min),
                              TABLE of ( OUTFLOW-STORAGE ) values
                                        (cms) - (ha-m)
                                      [ 0.000 , 0.000 ]
                                      [ 0.025 , 0.090 ]
                                      [ 0.175 , 0.510 ]
                                      [ 0.350 , 0.710 ]
                                      [ 0.495 , 0.820 ]
                                      [ 0.648 , 0.980 ]
                                      [ 0.965 , 1.045 ]
                                      [ 1.072 , 1.140 ]
                                      [ -1 , -1 ] (max twenty pts)
                                      NHYDovf=["SWMBOVF"]
*%-----------------|------------------------------------------------------------|
ADD HYD                  NHYDsum=["D4-EX"], NHYDs to add=["DRAIN4"+"D4"+"SWMF-B"+"SWMBOVF"]
*%-----------------|------------------------------------------------------------|
*ROUTE FLOW THROUGH O'Keefe Drain 5
* JFSA: Nov. 2020, added en points to close X-Section
ROUTE CHANNEL            NHYDout=["DRAIN5"], NHYDin=["D4-EX"], RDT=[1](min),
                         CHLGTH=[413.0](m), CHSLOPE=[0.16](%), FPSLOPE=[0.16](%),
                         SECNUM=[1], NSEG=[3]
                         ( SEGROUGH, SEGDIST (m))=[0.043,12.29 -0.033,17.97
                         0.043,32.84] NSEG times
                         ( DISTANCE (m), ELEVATION (m))=(-0.01, 2.50)
                         [0.00, 1.41]
                         [6.13, 0.97]
                         [12.29, 0.89]
                         [15.71, 0.00]
                         [17.97, 0.39]
                         [23.04, 0.35]
                         [32.83, 0.96]
                         (32.84, 2.50)
*%-----------------|------------------------------------------------------------|
CONTINUOUS NASHYD        NHYD=["D5"], DT=[1]min, AREA=[1.90](ha),
                         DWF=[0](cms), CN/C=[86], IA=[8.7](mm), N=[3], TP=[0.69]hrs,
                         Continuous simulation parameters:
                         IaRECper=[4](hrs),
                         SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                         InterEventTime=[12](hrs)
                         Baseflow simulation parameters:
                         BaseFlowOption=[1] ,
                         InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                         VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|------------------------------------------------------------|
*EXTERNAL FLOWS SOUTHEAST OF THE SITE NORTH OF McKENNA CASEY DR.
CONTINUOUS NASHYD        NHYD=["O-13SDF"], DT=[1]min, AREA=[9.74](ha),
                         DWF=[0](cms), CN/C=[81], IA=[4.0](mm), N=[3], TP=[.43]hrs,
                         Continuous simulation parameters:
                         IaRECper=[4](hrs),
                         SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                         InterEventTime=[12](hrs)
                         Baseflow simulation parameters:
                         BaseFlowOption=[1] ,
                         InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                         VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|------------------------------------------------------------|
*SNOW DISPOSAL FACILITY
*PARAMETERS BASED ON ROBINSON 2006 MODEL
ROUTE RESERVOIR          NHYDout=["SDF"], NHYDin=["O-13SDF"], RDT=[1](min),
```

```
                              TABLE of ( OUTFLOW-STORAGE ) values
                                        (cms) - (ha-m)
                                      [0.000,0.000]
                                      [0.150,0.600]
                                      (0.200,1.500)
                                      [ -1 , -1 ] (max twenty pts)
                                      NHYDovf=["OVFSDF"]
*%-----------------|-----------------------------------------------------------|
*ANALYSIS POINT 6 - McKenna Casey Dr.
*%-----------------|-----------------------------------------------------------|
ADD HYD                NHYDsum=["PT6MC"], NHYDs to add=["DRAIN5"+"D5"+"SDF"]
*%-----------------|-----------------------------------------------------------|
CONTINUOUS NASHYD      NHYD=["O-15"], DT=[1]min, AREA=[10.67](ha),
                       DWF=[0](cms), CN/C=[82], IA=[7.5](mm), N=[3], TP=[0.30]hrs,
                       Continuous simulation parameters:
                       IaRECper=[4](hrs),
                       SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                       InterEventTime=[12](hrs)
                       Baseflow simulation parameters:
                       BaseFlowOption=[1] ,
                       InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                       VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
*TOTAL FLOW NORTH OF McKENNA CASEY DR.
ADD HYD                NHYDsum=["M-C"], NHYDs to add=["PT6MC"+"O-15"]
*%-----------------|-----------------------------------------------------------|
*ROUTE FLOW THROUGH AREA O-14
* JFSA: Nov. 2020, added end points to close X-section
ROUTE CHANNEL          NHYDout=["O-14Ch"], NHYDin=["M-C"], RDT=[1](min),
                       CHLGTH=[845.3](m), CHSLOPE=[0.10](%), FPSLOPE=[0.10](%),
                       SECNUM=[1], NSEG=[3]
                       ( SEGROUGH, SEGDIST (m))=[0.06,15.00 -0.033,18.04 0.06,31.85] NSEG times
                       ( DISTANCE (m), ELEVATION (m))=[-0.01, 2.5
                       (0.00, 1.53]
                       (5.56, 1.47)
                       (9.21, 1.45)
                       (12.45, 1.53)
                       (13.70, 1.50)
                       (15.00, 0.69)
                       (15.34, 0.00)
                       (16.51, 0.05)
                       (17.30, 0.17)
                       (18.04, 0.74)
                       (19.29, 1.32)
                       (22.73, 1.47)
                       (31.84, 1.41)
                       (31.85, 2.50)
*%-----------------|-----------------------------------------------------------|
*%    -Change O-14 from NASHYD to STANDHYD, name it "S-1-Okeefe" and add it to S-1 subcatchment based on Project 1474-BCDC, JFSA, Nov. 2020
*%    -JFSA 2021-02-16, add detailed subcatchment drainage area for each subcatchment in Corrigan sub-catchment. After adding part of  O-14 to S_1 sub-catchment so O-14 becomes 5 ha instead of 30.02 ha and TP becomes 0.133 (5*0.8/30.02) instead of 0.8
CONTINUOUS NASHYD      NHYD=["O-14"], DT=[1]min, AREA=[5](ha),
                       DWF=[0](cms), CN/C=[82], IA=[7.5](mm), N=[3], TP=[0.133]hrs,
                       Continuous simulation parameters:
                       IaRECper=[4](hrs),
                       SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                       InterEventTime=[12](hrs)
                       Baseflow simulation parameters:
                       BaseFlowOption=[1] ,
                       InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                       VHydCond=[0.055](mm/hr),   END=-1
*
*%-----------------|-----------------------------------------------------------|
```

```
*ANALYSIS POINT 7 - JOCK RIVER
* 2020-12-01 To Foster Drain
* 2020-12-01  replace ("PT7JR") by ("OKEEFE")
*%-----------------|-----------------------------------------------------------|
ADD HYD             NHYDsum=["OKEEFE"], NHYDs to add=["O-14Ch"+"O-14"]
*%-----------------|-----------------------------------------------------------|
*CONTINUOUS STANDHYD NHYD=["OKEEFE"], DT=[1](min), AREA=[448](ha),
*                    XIMP=[0.65], TIMP=[0.65], DWF=[0](cms), LOSS=[2],
*                    SCS curve number CN=[77],
*                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[0.5](%),
*                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
*                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[0.5](%),
*                            LGI=[1728](m), MNI=[0.013], SCI=[0](min),
*                    Continuous simulation parameters:
*                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
*                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                    InterEventTime=[18](hrs),   END=-1
*#*****************************************************************************
*#    Okeefe Pond
*#    - Rating curve obtained assuming 40m3/ha in 24 hours for quality control
*#      and a ratio of the catchment area to the West Clarke pond rating curve
*#      from the MSS for the next coordinates
*#*****************************************************************************
*ROUTE RESERVOIR     NHYDout=["P_OKE"], NHYDin=["OKEEFE"],
*                    RDT=[1](min),
*                         TABLE of ( OUTFLOW-STORAGE ) values
*                                  (cms) - (ha-m)
*                                [   0.0  ,  0.0]
*                                [  14.13 , 13.0]
*                                [   -1  ,  -1  ]  (maximum one hundred pairs of points)
*                                NHYDovf=["ok-OVF"],
*%-----------------|-----------------------------------------------------------------------------------------|
*   -JFSA 2021-02-25  "S-1-D2" and "S-1-D3" are part of S-1 sub-catchment. They are moved to drain before station 6215 on Jock River
CONTINUOUS STANDHYD NHYD=["S-1-D2"], DT=[1](min), AREA=[18.67](ha), XIMP=[0.65], TIMP=[0.65], DWF=[0](cms),
                    LOSS=[2], SCS curve number CN=[75], Pervious surfaces: IAper=[4.67](mm), SLPP=[2.0](%),
                    LGP=[40](m), MNP=[0.25], SCP=[0](min), Impervious surfaces: IAimp=[1.57](mm), SLPI=[0.75](%),
                    LGI=[352.798](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs),   END=-1
*%-----------------|-----------------------------------------------------------|
*CONTINUOUS NASHYD   NHYD=["S-1-D2"], DT=[1]min, AREA=[18.67](ha),
*                    DWF=[0](cms), CN/C=[77],  IA=[4.67](mm),
*                    N=[3], TP=[1.120]hrs,
*                    Continuous simulation parameters:
*                    IaRECper=[4](hrs),
*                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                    InterEventTime=[12](hrs)
*                    Baseflow simulation parameters:
*                    BaseFlowOption=[1] ,
*                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
*                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
COMPUTE DUALHYD     NHYDin=["S-1-D2"], CINLET=[2.097](cms), NINLET=[1],
                    MajNHYD=["S-1-D2J"]
                    MinNHYD=["S-1-D2N"]
                    TMJSTO=[9999999](cu-m)
*%-----------------|-----------------------------------------------------------|
ADD HYD             NHYDsum=["S-1-D2S"], NHYDs to add=["S-1-D2J"+"S-1-D2N"]
*%-----------------|-----------------------------------------------------------|
```

```
ROUTE RESERVOIR     NHYDout=["S-1-D2R"] ,NHYDin=["S-1-D2S"] ,
                    RDT=[1](min),
                          TABLE of ( OUTFLOW-STORAGE ) values
                                      (cms) - (ha-m)
                                    [ 0.0     , 0.0 ]
                                    [ 0.2231, 0.7445 ]
                                    [    -1  ,  -1    ]  (max twenty pts)
                          NHYDovf=["S-1-D2Rovf"]
*%-----------------|------------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["S-1-D3"], DT=[1](min), AREA=[6.79](ha), XIMP=[0.65],
TIMP=[0.65], DWF=[0](cms),
                    LOSS=[2], SCS curve number CN=[75], Pervious surfaces:
                    IAper=[4.67](mm), SLPP=[2.0](%),
                    LGP=[40](m), MNP=[0.25], SCP=[0](min), Impervious surfaces:
                    IAimp=[1.57](mm), SLPI=[0.75](%),
                    LGI=[212.760](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs),   END=-1
*%-----------------|------------------------------------------------------------|
*CONTINUOUS NASHYD   NHYD=["S-1-D3"], DT=[1]min, AREA=[6.79](ha),
*                    DWF=[0](cms), CN/C=[77],  IA=[4.67](mm),
*                    N=[3], TP=[1.281]hrs,
*                    Continuous simulation parameters:
*                    IaRECper=[4](hrs),
*                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                    InterEventTime=[12](hrs)
*                    Baseflow simulation parameters:
*                    BaseFlowOption=[1] ,
*                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
*                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|------------------------------------------------------------|
COMPUTE DUALHYD     NHYDin=["S-1-D3"], CINLET=[0.831](cms), NINLET=[1],
                    MajNHYD=["S-1-D3J"]
                    MinNHYD=["S-1-D3N"]
                    TMJSTO=[9999999](cu-m)
*%-----------------|------------------------------------------------------------|
ADD HYD             NHYDsum=["S-1-D3S"], NHYDs to add=["S-1-D3J"+"S-1-D3N"]
*%-----------------|------------------------------------------------------------|
ROUTE RESERVOIR     NHYDout=["S-1-D3R"] ,NHYDin=["S-1-D3S"] ,
                    RDT=[1](min),
                          TABLE of ( OUTFLOW-STORAGE ) values
                                      (cms) - (ha-m)
                                    [ 0.0     , 0.0 ]
                                    [ 0.0811, 0.2708 ]
                                    [    -1  ,  -1    ]  (max twenty pts)
                          NHYDovf=["S-1-D3Rovf"]
*%-----------------|------------------------------------------------------------|
ADD HYD             NHYDsum=["SN_OK"], NHYDs to
add=["N_OK"+"OKEEFE"+"S-1-D2R"+"S-1-D3R"+"S-1-D2Rovf"+"S-1-D3Rovf"]
*%-----------------|------------------------------------------------------------|
SAVE HYD            NHYD=["SN_OK"],   # OF PCYCLES=[-1],  ICASEsh=[1]
                    HYD_COMMENT=["Total Flows at Okeefe Drain"]
*%-----------------|------------------------------------------------------------|
*#
*# Hydrograph from Node Okeefe routed to Node at Foster Drain
*# Channel X-Section obtained from RVCA Hydraulic Model - Station 6215
*#
ROUTE CHANNEL       NHYDout=["N_FO"] ,NHYDin=["SN_OK"] ,
                    RDT=[1](min),
                    CHLGTH=[1183](m),  CHSLOPE=[0.0761](%),
                                       FPSLOPE=[0.0761](%),
                    SECNUM=[1.0],       NSEG=[3]
                    ( SEGROUGH, SEGDIST (m))=
                      [0.050,-33.89
```

```
                        -0.035,31.59
                        0.050,34.41] NSEG times
                      ( DISTANCE (m), ELEVATION (m))=
                      [-794.18, 91.00]
                      [-775.41, 91.50]
                      [-702.63, 91.50]
                      [-546.19, 91.50]
                      [-529.54, 91.50]
                      [-323.44, 91.00]
                      [-320.71, 91.00]
                      [-183.59, 91.00]
                      [-182.54, 90.50]
                      [-181.36, 90.00]
                      [-177.37, 90.00]
                      [-87.70, 90.00]
                      [-33.89, 90.00]
                      [-18.52, 86.88]
                      [0.00,85.20]
                      [16.20, 86.83]
                      [31.59, 90.00]
                      [33.03, 90.50]
                      [34.41, 91.00]
*%-----------------|----------------------------------------------------------|
*#*****************************************************************************
*#    Catchment FOSTER
*#    - To Foster ditch (north of the Jock)
*#    - Partially developed (medium density); remaining agricultural
*#    - 2020-12-01 JFSA Foster area is 332 as per Foster SWMF Environmental Study Report, CH2MHILL, Aug 2013.
*#    - 2020-12-01 decrease Foster drainage area from (373 HA) to (307.98 HA) after increasing Okeefe drainage area to (513.02 HA) so the total drainage area remains the same
*#    - 2021-02-12  update Foster area to 325.44 ha as measured from QGIS
*#*****************************************************************************
CONTINUOUS STANDHYD NHYD=["FOSTER"], DT=[1]min, AREA=[325.44](ha),
                    XIMP=[0.55], TIMP=[0.55], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[74],
                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[0.5](%),
                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[0.5](%),
                            LGI=[1472.956](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[18](hrs),   END=-1
*#*****************************************************************************
*#    Foster Pond
*#    - Rating curve obtained assuming 40m3/ha in 24 hours for quality control
*#      and a ratio of the catchment area to the West Clarke pond rating curve
*#      from the MSS for the next coordinates
*#*****************************************************************************
ROUTE RESERVOIR     NHYDout=["P_FOS"],  NHYDin=["FOSTER"],
                    RDT=[1](min),
                          TABLE of ( OUTFLOW-STORAGE ) values
                                      (cms) - (ha-m)
                                    [   0.0 ,  0.0 ]
                                    [   10.34 , 10]
                                    [   -1  ,  -1  ]  (max twenty pts)
                          NHYDovf=["FO-OVF"]
*%-----------------|----------------------------------------------------------|
ADD HYD             NHYDsum=["FOSTER-OUT"], NHYDs to add=["P_FOS"+"FO-OVF"]
*%-----------------|----------------------------------------------------------|
*#*****************************************************************************
*    -Brazeau area from P 1800-19 =[71.751], change to 63.59 ha based on GIS measurements
*     -JFSA, 2021-01-19  update "W_CLAR_BRAZ" to 73.29 ha based on GIS measurements
*     -JFSA, 2021-01-22  Brazeau ("MS_P10"+"P10-OVF")brazeau pond discharges directly
```

```
to the jock river through a road side ditch on the west side of Borrisokane road
(station 6016)
CONTINUOUS STANDHYD NHYD=["W_CLAR_BRAZ"], DT=[1]min, AREA=[73.29](ha),
                    XIMP=[0.6], TIMP=[0.65], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[77],
                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[0.5](%),
                            LGI=[699.00](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[18](hrs),   END=-1
*%-----------------|------------------------------------------------------------|
* 2020-12-01 correct pond curve values
ROUTE RESERVOIR     NHYDout=["MS_P10"],  NHYDin=["W_CLAR_BRAZ"],
                    RDT=[1](min),
                          TABLE of ( OUTFLOW-STORAGE ) values
                                      (cms) - (ha-m)
                                    [   0.0 ,  0.0 ]
                                    [ 0.068 , 0.001 ]
                                    [ 0.271 , 0.022 ]
                                    [ 0.379 , 0.051 ]
                                    [ 0.48 , 0.091 ]
                                    [ 0.853 , 0.341 ]
                                    [ 1.005 , 0.61 ]
                                    [ 1.128 , 1.231 ]
                                    [ 1.155 , 1.592 ]
                                    [ 1.194 , 1.876 ]
                                    [ 1.2 , 1.921 ]
                                    [ 1.259 , 2.369 ]
                                    [ 1.3 , 2.665 ]
                                    [ 1.349 , 2.813 ]
                                    [   -1  ,  -1  ]  (max twenty pts)
                          NHYDovf=["P10-OVF"]
*%-----------------|------------------------------------------------------------|
*   -JFSA 2021-02-26  "S-1-FO-D2" is a part of S-1 sub-catchment. It is moved to drain
before station 980 on Foster Drain
CONTINUOUS STANDHYD NHYD=["S-1-FO-D2"], DT=[1]min, AREA=[4.94](ha),
                    XIMP=[0.55], TIMP=[0.55], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[74],
                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[0.5](%),
                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[0.5](%),
                            LGI=[181.475](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[18](hrs),   END=-1
*%-----------------|------------------------------------------------------------|
*CONTINUOUS NASHYD   NHYD=["S-1-FO-D2"], DT=[1]min, AREA=[4.94](ha),
*                    DWF=[0](cms), CN/C=[77],  IA=[4.67](mm),
*                    N=[3], TP=[1.10]hrs,
*                    Continuous simulation parameters:
*                    IaRECper=[4](hrs),
*                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                    InterEventTime=[12](hrs)
*                    Baseflow simulation parameters:
*                    BaseFlowOption=[1] ,
*                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
*                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|------------------------------------------------------------|
COMPUTE DUALHYD     NHYDin=["S-1-FO-D2"], CINLET=[0.508](cms), NINLET=[1],
                    MajNHYD=["S-1-FO-D2J"]
                    MinNHYD=["S-1-FO-D2N"]
                    TMJSTO=[9999999](cu-m)
```

```
*%-----------------|-------------------------------------------------------------|
ADD HYD             NHYDsum=["S-1-FO-D2S"], NHYDs to add=["S-1-FO-D2J"+"S-1-FO-D2N"]
*%-----------------|-------------------------------------------------------------|
ROUTE RESERVOIR     NHYDout=["S-1-FO-D2R"] ,NHYDin=["S-1-FO-D2S"] ,
                    RDT=[1](min),
                          TABLE of ( OUTFLOW-STORAGE ) values
                                      (cms) - (ha-m)
                                    [ 0.0     , 0.0 ]
                                    [ 0.0590, 0.1970 ]
                                    [    -1  ,  -1    ]  (max twenty pts)
                          NHYDovf=["S-1FOD2ovf"]
*%-----------------|-------------------------------------------------------------|
ADD HYD             NHYDsum=["980"], NHYDs to
add=["FOSTER-OUT"+"S-1-FO-D2R"+"S-1FOD2ovf"]
*%-----------------|-------------------------------------------------------------|
SAVE HYD            NHYD=["980"],   # OF PCYCLES=[-1],  ICASEsh=[1]
                    HYD_COMMENT=["Total Flows at Station 980 on Foster Drain"]
*%-----------------|-------------------------------------------------------------|
*#
*# Hydrograph from Node Foster SWM (Station 980)to Node at station 520
*# Channel X-Section obtained from RVCA Hydraulic Model - Station 980
*#
ROUTE CHANNEL       NHYDout=["980-out"] ,NHYDin=["980"] ,
                    RDT=[1](min),
                    CHLGTH=[460](m),  CHSLOPE=[0.04348](%),
                                        FPSLOPE=[0.04348](%),
                    SECNUM=[1.0],       NSEG=[3]
                    ( SEGROUGH, SEGDIST (m))=
                      [0.050,45.90
                      -0.035,53.30
                      0.050,100] NSEG times
                    ( DISTANCE (m), ELEVATION (m))=
                    [0, 91.75 ]
                    [42.4, 92.18 ]
                    [43.5, 92.16 ]
                    [44.1, 92.1 ]
                    [44.6, 92 ]
                    [44.8, 91.86 ]
                    [45.9, 91.04 ]
                    [46.4, 90.65 ]
                    [46.8, 90.36 ]
                    [47.9, 90.32 ]
                    [48.7, 90.35 ]
                    [50.7, 90.33 ]
                    [52.2, 90.38 ]
                    [52.5, 90.59 ]
                    [53.3, 91.28 ]
                    [54, 91.83 ]
                    [54.3, 92 ]
                    [54.8, 92.08 ]
                    [55.4, 92.12 ]
                    [100, 91.84 ]
*%-----------------|-------------------------------------------------------------|
*   -JFSA 2021-02-26  "S-1-FO-D1" is a part of S-1 sub-catchment. It is moved to drain
before station 520 on Foster Drain
CONTINUOUS STANDHYD NHYD=["S-1-FO-D1"], DT=[1]min, AREA=[5.11](ha),
                    XIMP=[0.65], TIMP=[0.65], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[74],
                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[0.5](%),
                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[0.5](%),
                            LGI=[184.572](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[18](hrs),   END=-1
```

```
*%-----------------|-------------------------------------------------------------|
COMPUTE DUALHYD     NHYDin=["S-1-FO-D1"], CINLET=[0.605](cms), NINLET=[1],
                    MajNHYD=["S-1-FO-D1J"]
                    MinNHYD=["S-1-FO-D1N"]
                    TMJSTO=[9999999](cu-m)
*%-----------------|-------------------------------------------------------------|
ADD HYD             NHYDsum=["S-1-FO-D1S"], NHYDs to add=["S-1-FO-D1N"+"S-1-FO-D1J"]
*%-----------------|-------------------------------------------------------------|
ROUTE RESERVOIR     NHYDout=["S-1-FO-D1R"] ,NHYDin=["S-1-FO-D1S"] ,
                    RDT=[1](min),
                          TABLE of ( OUTFLOW-STORAGE ) values
                                      (cms) - (ha-m)
                                    [ 0.0     , 0.0 ]
                                    [ 0.0611, 0.2038 ]
                                    [    -1  ,  -1    ]  (max twenty pts)
                          NHYDovf=["S-1FOD1ovf"]
*%-----------------|-------------------------------------------------------------|
ADD HYD             NHYDsum=["520"], NHYDs to add=["980-out"+"S-1-FO-D1R"+"S-1FOD1ovf"]
*%-----------------|-------------------------------------------------------------|
SAVE HYD            NHYD=["520"],   # OF PCYCLES=[-1],  ICASEsh=[1]
                    HYD_COMMENT=["Total Flows at Sation 520 on Foster Drain"]
*%-----------------|-------------------------------------------------------------|
*# Hydrograph from Node at Station 520 (Foster Drain) to Node at station 6016 (Jock River)
*# Channel X-Section obtained from RVCA Hydraulic Model - Station 520
*#
ROUTE CHANNEL       NHYDout=["520-out"] ,NHYDin=["520"] ,
                    RDT=[1](min),
                    CHLGTH=[860](m),  CHSLOPE=[0.5872](%),
                                        FPSLOPE=[0.5872](%),
                    SECNUM=[1.0],       NSEG=[3]
                    ( SEGROUGH, SEGDIST (m))=
                      [0.050,45.90
                      -0.035,54.3
                      0.050,100.1097] NSEG times
                    ( DISTANCE (m), ELEVATION (m))=
                    [0, 91.26 ]
                    [44.9, 91.46 ]
                    [45.1, 91.37 ]
                    [45.9, 90.84 ]
                    [47, 90.32 ]
                    [47.5, 90.22 ]
                    [48, 90.17 ]
                    [50.7, 90.19 ]
                    [51.5, 90.17 ]
                    [52.2, 90.13 ]
                    [52.7, 90.12 ]
                    [53.3, 90.14 ]
                    [53.5, 90.31 ]
                    [53.9, 90.59 ]
                    [54.3, 90.87 ]
                    [54.7, 91.04 ]
                    [55.3, 91.24 ]
                    [55.5, 91.26 ]
                    [63.7, 91.37 ]
                    [100.1097, 91.43 ]
*%-----------------|-------------------------------------------------------------|
*   -JFSA 2021-02-26  "S-1-FO-F-D" is a part of S-1 sub-catchment. It is moved to drain before station 6016 on Jock River
CONTINUOUS STANDHYD NHYD=["S-1-FO-F-D"], DT=[1]min, AREA=[14.96](ha),
                    XIMP=[0.65], TIMP=[0.65], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[74],
                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[0.5](%),
                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[0.5](%),
                            LGI=[315.806](m), MNI=[0.013], SCI=[0](min),
```

```
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[18](hrs),   END=-1
*%-----------------|-------------------------------------------------------------|
*CONTINUOUS NASHYD   NHYD=["S-1-FO-F-D"], DT=[1]min, AREA=[14.96](ha),
*                    DWF=[0](cms), CN/C=[77],  IA=[4.67](mm),
*                    N=[3], TP=[1.007]hrs,
*                    Continuous simulation parameters:
*                    IaRECper=[4](hrs),
*                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                    InterEventTime=[12](hrs)
*                    Baseflow simulation parameters:
*                    BaseFlowOption=[1] ,
*                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
*                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-------------------------------------------------------------|
COMPUTE DUALHYD     NHYDin=["S-1-FO-F-D"], CINLET=[1.615](cms), NINLET=[1],
                    MajNHYD=["S-1FO-F-DJ"]
                    MinNHYD=["S-1FO-F-DN"]
                    TMJSTO=[9999999](cu-m)
*%-----------------|-------------------------------------------------------------|
ADD HYD             NHYDsum=["S-1FO-F-DS"], NHYDs to add=["S-1FO-F-DJ"+"S-1FO-F-DN"]
*%-----------------|-------------------------------------------------------------|
ROUTE RESERVOIR     NHYDout=["S-1FO-F-DR"] ,NHYDin=["S-1FO-F-DS"] ,
                    RDT=[1](min),
                          TABLE of ( OUTFLOW-STORAGE ) values
                                      (cms) - (ha-m)
                                    [ 0.0     , 0.0 ]
                                    [ 0.1788, 0.5966 ]
                                    [    -1  ,  -1    ]  (max twenty pts)
                          NHYDovf=["S-1FoFDovf"]
*%-----------------|-------------------------------------------------------------|
*   -JFSA 2021-02-26  "S-1-D8" is a part of S-1 sub-catchment. It is moved to drain
before station 6016 on Jock River
CONTINUOUS STANDHYD NHYD=["S-1-D8"], DT=[1]min, AREA=[5.27](ha), XIMP=[0.325],
TIMP=[0.65], DWF=[0](cms), LOSS=[1]:
                    Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                    F=[0.00](mm),
                    Pervious   areas: IAper=[4.67](mm), SLPP=[2.0](%), LGP=[40](m),
                    MNP=[0.250], SCP=[0](min),
                    Impervious areas: IAimp=[0.785](mm), SLPI=[0.75](%),
                    LGI=[187.439](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                    END=-1
*%-----------------|-------------------------------------------------------------|
*CONTINUOUS NASHYD   NHYD=["S-1-D8"], DT=[1]min, AREA=[5.27](ha),
*                    DWF=[0](cms), CN/C=[77],  IA=[4.67](mm),
*                    N=[3], TP=[1.10]hrs,
*                    Continuous simulation parameters:
*                    IaRECper=[4](hrs),
*                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                    InterEventTime=[12](hrs)
*                    Baseflow simulation parameters:
*                    BaseFlowOption=[1] ,
*                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
*                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-------------------------------------------------------------|
COMPUTE DUALHYD     NHYDin=["S-1-D8"], CINLET=[0.672](cms), NINLET=[1],
                    MajNHYD=["S-1-D8J"]
                    MinNHYD=["S-1-D8N"]
                    TMJSTO=[9999999](cu-m)
*%-----------------|-------------------------------------------------------------|
ADD HYD             NHYDsum=["S-1-D8S"], NHYDs to add=["S-1-D8J"+"S-1-D8N"]
*%-----------------|-------------------------------------------------------------|
```

```
*ADD HYD              NHYDsum=["S-1-D"], NHYDs to add=["S-1-Okeefe"+"S-1"+"S-1-Fost"]
*%-----------------|-----------------------------------------------------------|
*COMPUTE DUALHYD      NHYDin=["S-1-D"], CINLET=[11.616](cms), NINLET=[1],
*                     MajNHYD=["S-1-D-MJ"]
*                     MinNHYD=["S-1-D-MN"]
*                     TMJSTO=[5974](cu-m)
*%-----------------|-----------------------------------------------------------|
*ADD HYD              NHYDsum=["S-1-DEV"], NHYDs to add=["S-1-D-MJ"+"S-1-D-MN"]
*%-----------------|-----------------------------------------------------------|
ROUTE RESERVOIR      NHYDout=["S-1-D8R"] ,NHYDin=["S-1-D8S"] ,
                     RDT=[1](min),
                           TABLE of ( OUTFLOW-STORAGE ) values
                                       (cms) - (ha-m)
                                     [ 0.0     , 0.0 ]
                                     [ 0.0630, 0.2102 ]
                                     [    -1  ,  -1    ]  (max twenty pts)
                           NHYDovf=["S-1-D8Rovf"]
*%-----------------|-----------------------------------------------------------|
*   -JFSA 2021-02-26  "S-1-A" is a part of S-1 sub-catchment. It is moved to drain before station 6016 on Jock River
CONTINUOUS NASHYD    NHYD=["S-1-A"], DT=[1]min, AREA=[75.88](ha),
                     DWF=[0](cms), CN/C=[77],  IA=[4.67](mm),
                     N=[3], TP=[0.619]hrs,
                     Continuous simulation parameters:
                     IaRECper=[4](hrs),
                     SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                     InterEventTime=[12](hrs)
                     Baseflow simulation parameters:
                     BaseFlowOption=[1] ,
                     InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                     VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
*     -JFSA, 2021-01-22  "W_CLAR_UNDE" (west of Clarke sub-catchment) discharges directly to the jock river through a road side ditch on the west side of Borrisokane road (station 6016)
CONTINUOUS NASHYD    NHYD=["W_CLAR_UNDE"], DT=[1]min, AREA=[35.65](ha),
                     DWF=[0](cms), CN/C=[77],  IA=[4.67](mm),
                     N=[3], TP=[1.10]hrs,
                     Continuous simulation parameters:
                     IaRECper=[4](hrs),
                     SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                     InterEventTime=[12](hrs)
                     Baseflow simulation parameters:
                     BaseFlowOption=[1] ,
                     InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                     VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
ADD HYD              NHYDsum=["SN_FO"], NHYDs to add=["N_FO"+"520-out"+"MS_P10"+"P10-OVF"+"W_CLAR_UNDE"+"S-1FoFDovf"+"S-1FO-F-DR"+"S-1-D8Rovf"+"S-1-D8R"+"S-1-A"]
*%-----------------|-----------------------------------------------------------|
SAVE HYD             NHYD=["SN_FO"],   # OF PCYCLES=[-1],  ICASEsh=[1]
                     HYD_COMMENT=["Total Flows at Foster Drain"]
*%-----------------|-----------------------------------------------------------|
*# Hydrograph from Node Foster routed to Node at Cedarview Road
*# Channel X-Section obtained from RVCA Hydraulic Model - Station 6016
*#
ROUTE CHANNEL        NHYDout=["N_CE"] ,NHYDin=["SN_FO"] ,
                     RDT=[1](min),
                     CHLGTH=[159](m),  CHSLOPE=[0.0818](%),
                                         FPSLOPE=[0.0818](%),
                     SECNUM=[1.0],       NSEG=[3]
                     ( SEGROUGH, SEGDIST (m))=
                       [0.050,-15.46
                       -0.035,26.55
                       0.050,116.76] NSEG times
```

```
                    ( DISTANCE (m), ELEVATION (m))=
                    [-645.23, 91.50]
                    [-391.20, 91.50]
                    [-91.00, 91.50]
                    [-85.52, 91.50]
                    [-15.46, 89.40]
                    [-9.79, 89.31]
                    [-3.22, 86.24]
                    [3.22, 85.07]
                    [10.96, 85.79]
                    [16.44, 86.49]
                    [26.55, 89.45]
                    [29.03, 90.27]
                    [35.76, 90.67]
                    [36.67, 91.00]
                    [108.08, 91.00]
                    [109.82, 90.50]
                    [112.04, 90.50]
                    [114.62, 91.00]
                    [116.76, 91.50]
*%-----------------|-------------------------------------------------------------|
*#*****************************************************************************
*#    Catchment S-1
*#    - To Jock River (north and south of Jock)
*#    - Primarily agricultural fields; portion of sand quarry
*%-----------------|-------------------------------------------------------------|
*%    -2020-12-17 "S-1-Undev" and "S-1-Fost" was a part of Foster drain, they are below the foster pond. Now they are added to S-1 subcatchment based on Project 1474-BCDC, JFSA, Nov. 2020
*%    -2020-12-17 Change O-14 (it was part of Okeefe drain) to "S-1-Okeefe" and add it to S-1 subcatchment based on Project 1474-BCDC, JFSA, Nov. 2020
*%    -2020-12-17 Add "S-1-BCDC" as NASHYD
*%    -2020-12-17 all other S-1 subcatchment as STANDHYD with DUALHYD and ROUTE RESERVOIR
*%-----------------|-------------------------------------------------------------|
*#*****************************************************************************
*   -JFSA 2021-02-26  "S-1-A" is a part of S-1 sub-catchment. It is moved to drain before station 6016 on Jock River
*CONTINUOUS NASHYD   NHYD=["S-1-A"], DT=[1]min, AREA=[75.88](ha),
*                    DWF=[0](cms), CN/C=[77],  IA=[4.67](mm),
*                    N=[3], TP=[0.619]hrs,
*                    Continuous simulation parameters:
*                    IaRECper=[4](hrs),
*                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                    InterEventTime=[12](hrs)
*                    Baseflow simulation parameters:
*                    BaseFlowOption=[1] ,
*                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
*                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-------------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["S-1-B"], DT=[1]min, AREA=[55.36](ha),
                    DWF=[0](cms), CN/C=[77],  IA=[4.67](mm),
                    N=[3], TP=[0.451]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-------------------------------------------------------------|
*#    -  JFSA 2021-02-24 change the name from S-1-BCDC to S-1-A and S-1-B. Change their TP values based on the new areas compared to the old ones.
*CONTINUOUS NASHYD   NHYD=["S-1-BCDC"], DT=[1]min, AREA=[134.9](ha),
*                    DWF=[0](cms), CN/C=[77],  IA=[4.67](mm),
*                    N=[3], TP=[1.10]hrs,
```

```
*                       Continuous simulation parameters:
*                       IaRECper=[4](hrs),
*                       SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                       InterEventTime=[12](hrs)
*                       Baseflow simulation parameters:
*                       BaseFlowOption=[1] ,
*                       InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
*                       VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|----------------------------------------------------------|
*#    -  JFSA 2021-02-24 "S-1-BCDC-1" and "S-1-BCDC-2" are not existing anymore.
"S-1-BCDC-1" is part of "S-1-FO-D2" and "S-1-BCDC-2" is part of "S-1-D2" and "S-1-D3"
*CONTINUOUS NASHYD   NHYD=["S-1-BCDC-1"], DT=[1]min, AREA=[0.3](ha),
*                       DWF=[0](cms), CN/C=[77],  IA=[4.67](mm),
*                       N=[3], TP=[1.10]hrs,
*                       Continuous simulation parameters:
*                       IaRECper=[4](hrs),
*                       SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                       InterEventTime=[12](hrs)
*                       Baseflow simulation parameters:
*                       BaseFlowOption=[1] ,
*                       InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
*                       VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|----------------------------------------------------------|
*CONTINUOUS NASHYD   NHYD=["S-1-BCDC-2"], DT=[1]min, AREA=[1.3](ha),
*                       DWF=[0](cms), CN/C=[77],  IA=[4.67](mm),
*                       N=[3], TP=[1.10]hrs,
*                       Continuous simulation parameters:
*                       IaRECper=[4](hrs),
*                       SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                       InterEventTime=[12](hrs)
*                       Baseflow simulation parameters:
*                       BaseFlowOption=[1] ,
*                       InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
*                       VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|----------------------------------------------------------|
*#    -  JFSA 2021-01-19, after adding Greenbank pond, "S-1-BCDC-3" is not existing
anymore
*CONTINUOUS NASHYD   NHYD=["S-1-BCDC-3"], DT=[1]min, AREA=[3.9](ha),
*                       DWF=[0](cms), CN/C=[77],  IA=[4.67](mm),
*                       N=[3], TP=[1.10]hrs,
*                       Continuous simulation parameters:
*                       IaRECper=[4](hrs),
*                       SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                       InterEventTime=[12](hrs)
*                       Baseflow simulation parameters:
*                       BaseFlowOption=[1] ,
*                       InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
*                       VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|----------------------------------------------------------|
*   -JFSA 2021-02-25  "S-1-Okeefe" is a part of S-1 sub-catchment. It is moved to drain
before station 7245 on Jock River
*CONTINUOUS STANDHYD NHYD=["S-1-Okeefe"], DT=[1](min), AREA=[44.93](ha), XIMP=[0.65],
TIMP=[0.65], DWF=[0](cms),
*                       LOSS=[2], SCS curve number CN=[75], Pervious surfaces:
IAper=[4.67](mm), SLPP=[2.0](%),
*                       LGP=[40](m), MNP=[0.25], SCP=[0](min), Impervious surfaces:
IAimp=[1.57](mm), SLPI=[0.75](%),
*                       LGI=[547.296](m), MNI=[0.013], SCI=[0](min),
*                       Continuous simulation parameters:
*                       IaRECper=[4](hrs),  IaRECimp=[4](hrs),
*                       SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                       InterEventTime=[12](hrs),   END=-1
*%-----------------|----------------------------------------------------------|
*COMPUTE DUALHYD     NHYDin=["S-1-Okeefe"], CINLET=[4.796](cms), NINLET=[1],
*                       MajNHYD=["S-1-OkMJ"]
*                       MinNHYD=["S-1-OkMN"]
```

```
*                     TMJSTO=[9999999](cu-m)
*%-----------------|-----------------------------------------------------------|
*ADD HYD              NHYDsum=["S-1-OkS"], NHYDs to add=["S-1-OkMJ"+"S-1-OkMN"]
*%-----------------|-----------------------------------------------------------|
*ROUTE RESERVOIR      NHYDout=["S-1-OkSR"] ,NHYDin=["S-1-OkS"] ,
*                     RDT=[1](min),
*                           TABLE of ( OUTFLOW-STORAGE ) values
*                                       (cms) - (ha-m)
*                                     [ 0.0     , 0.0 ]
*                                     [ 0.5370, 1.7917 ]
*                                     [    -1  ,  -1    ]  (max twenty pts)
*                           NHYDovf=["S-1-OkSovf"]
*%-----------------|-----------------------------------------------------------|
*CONTINUOUS NASHYD    NHYD=["S-1-Okeefe"], DT=[1]min, AREA=[44.93](ha),
*                     DWF=[0](cms), CN/C=[77],  IA=[4.67](mm),
*                     N=[3], TP=[1.049]hrs,
*                     Continuous simulation parameters:
*                     IaRECper=[4](hrs),
*                     SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                     InterEventTime=[12](hrs)
*                     Baseflow simulation parameters:
*                     BaseFlowOption=[1] ,
*                     InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
*                     VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
*   -JFSA 2021-02-26  "S-1-FO-D1" is a part of S-1 sub-catchment. It is moved to drain before station 520 on Foster Drain
*CONTINUOUS STANDHYD NHYD=["S-1-FO-D1"], DT=[1]min, AREA=[5.11](ha),
*                     XIMP=[0.65], TIMP=[0.65], DWF=[0](cms), LOSS=[2],
*                     SCS curve number CN=[74],
*                     Pervious   surfaces: IAper=[4.67](mm), SLPP=[0.5](%),
*                             LGP=[40](m), MNP=[0.25], SCP=[0](min),
*                     Impervious surfaces: IAimp=[1.57](mm), SLPI=[0.5](%),
*                             LGI=[184.572](m), MNI=[0.013], SCI=[0](min),
*                     Continuous simulation parameters:
*                     IaRECper=[4](hrs),  IaRECimp=[4](hrs),
*                     SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                     InterEventTime=[18](hrs),   END=-1
*%-----------------|-----------------------------------------------------------|
*COMPUTE DUALHYD      NHYDin=["S-1-FO-D1"], CINLET=[0.605](cms), NINLET=[1],
*                     MajNHYD=["S-1-FO-D1J"]
*                     MinNHYD=["S-1-FO-D1N"]
*                     TMJSTO=[9999999](cu-m)
*%-----------------|-----------------------------------------------------------|
*ADD HYD              NHYDsum=["S-1-FO-D1S"], NHYDs to add=["S-1-FO-D1N"+"S-1-FO-D1J"]
*%-----------------|-----------------------------------------------------------|
*ROUTE RESERVOIR      NHYDout=["S-1-FO-D1R"] ,NHYDin=["S-1-FO-D1S"] ,
*                     RDT=[1](min),
*                           TABLE of ( OUTFLOW-STORAGE ) values
*                                       (cms) - (ha-m)
*                                     [ 0.0     , 0.0 ]
*                                     [ 0.0611, 0.2038 ]
*                                     [    -1  ,  -1    ]  (max twenty pts)
*                           NHYDovf=["S-1FOD1ovf"]
*%-----------------|-----------------------------------------------------------|
*CONTINUOUS NASHYD    NHYD=["S-1-FO-D1"], DT=[1]min, AREA=[5.11](ha),
*                     DWF=[0](cms), CN/C=[77],  IA=[4.67](mm),
*                     N=[3], TP=[1.10]hrs,
*                     Continuous simulation parameters:
*                     IaRECper=[4](hrs),
*                     SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                     InterEventTime=[12](hrs)
*                     Baseflow simulation parameters:
*                     BaseFlowOption=[1] ,
*                     InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
*                     VHydCond=[0.055](mm/hr),   END=-1
```

```
*%-----------------|-----------------------------------------------------------|
*   -JFSA 2021-02-26  "S-1-FO-D2" is a part of S-1 sub-catchment. It is moved to drain before station 980 on Foster Drain
*CONTINUOUS STANDHYD NHYD=["S-1-FO-D2"], DT=[1]min, AREA=[4.94](ha),
*                    XIMP=[0.55], TIMP=[0.55], DWF=[0](cms), LOSS=[2],
*                    SCS curve number CN=[74],
*                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[0.5](%),
*                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
*                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[0.5](%),
*                            LGI=[181.475](m), MNI=[0.013], SCI=[0](min),
*                    Continuous simulation parameters:
*                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
*                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                    InterEventTime=[18](hrs),   END=-1
*%-----------------|-----------------------------------------------------------|
*CONTINUOUS NASHYD   NHYD=["S-1-FO-D2"], DT=[1]min, AREA=[4.94](ha),
*                    DWF=[0](cms), CN/C=[77],  IA=[4.67](mm),
*                    N=[3], TP=[1.10]hrs,
*                    Continuous simulation parameters:
*                    IaRECper=[4](hrs),
*                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                    InterEventTime=[12](hrs)
*                    Baseflow simulation parameters:
*                    BaseFlowOption=[1] ,
*                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
*                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
*COMPUTE DUALHYD     NHYDin=["S-1-FO-D2"], CINLET=[0.508](cms), NINLET=[1],
*                    MajNHYD=["S-1-FO-D2J"]
*                    MinNHYD=["S-1-FO-D2N"]
*                    TMJSTO=[9999999](cu-m)
*%-----------------|-----------------------------------------------------------|
*ADD HYD             NHYDsum=["S-1-FO-D2S"], NHYDs to add=["S-1-FO-D2J"+"S-1-FO-D2N"]
*%-----------------|-----------------------------------------------------------|
*ROUTE RESERVOIR     NHYDout=["S-1-FO-D2R"] ,NHYDin=["S-1-FO-D2S"] ,
*                    RDT=[1](min),
*                          TABLE of ( OUTFLOW-STORAGE ) values
*                                      (cms) - (ha-m)
*                                    [ 0.0     , 0.0 ]
*                                    [ 0.0590, 0.1970 ]
*                                    [    -1  ,  -1    ]  (max twenty pts)
*                          NHYDovf=["S-1FOD2ovf"]
*%-----------------|-----------------------------------------------------------|
*   -JFSA 2021-02-26  "S-1-FO-F-D" is a part of S-1 sub-catchment. It is moved to drain before station 6016 on Jock River
*CONTINUOUS STANDHYD NHYD=["S-1-FO-F-D"], DT=[1]min, AREA=[14.96](ha),
*                    XIMP=[0.65], TIMP=[0.65], DWF=[0](cms), LOSS=[2],
*                    SCS curve number CN=[74],
*                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[0.5](%),
*                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
*                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[0.5](%),
*                            LGI=[315.806](m), MNI=[0.013], SCI=[0](min),
*                    Continuous simulation parameters:
*                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
*                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                    InterEventTime=[18](hrs),   END=-1
*%-----------------|-----------------------------------------------------------|
*CONTINUOUS NASHYD   NHYD=["S-1-FO-F-D"], DT=[1]min, AREA=[14.96](ha),
*                    DWF=[0](cms), CN/C=[77],  IA=[4.67](mm),
*                    N=[3], TP=[1.007]hrs,
*                    Continuous simulation parameters:
*                    IaRECper=[4](hrs),
*                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                    InterEventTime=[12](hrs)
*                    Baseflow simulation parameters:
*                    BaseFlowOption=[1] ,
```

```
*                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
*                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
*COMPUTE DUALHYD     NHYDin=["S-1-FO-F-D"], CINLET=[1.749](cms), NINLET=[1],
*                    MajNHYD=["S-1FO-F-DJ"]
*                    MinNHYD=["S-1FO-F-DN"]
*                    TMJSTO=[9999999](cu-m)
*%-----------------|-----------------------------------------------------------|
*ADD HYD             NHYDsum=["S-1FO-F-DS"], NHYDs to add=["S-1FO-F-DJ"+"S-1FO-F-DN"]
*%-----------------|-----------------------------------------------------------|
*ROUTE RESERVOIR     NHYDout=["S-1FO-F-DR"] ,NHYDin=["S-1FO-F-DS"] ,
*                    RDT=[1](min),
*                          TABLE of ( OUTFLOW-STORAGE ) values
*                                      (cms) - (ha-m)
*                                    [ 0.0     , 0.0 ]
*                                    [ 0.1788, 0.5966 ]
*                                    [    -1  ,  -1    ]  (max twenty pts)
*                          NHYDovf=["S-1FoFDovf"]
*%-----------------|-----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["S-1-D1"], DT=[1](min), AREA=[21.67](ha), XIMP=[0.65], TIMP=[0.65], DWF=[0](cms),
                    LOSS=[2], SCS curve number CN=[75], Pervious surfaces: IAper=[4.67](mm), SLPP=[2.0](%),
                    LGP=[40](m), MNP=[0.25], SCP=[0](min), Impervious surfaces: IAimp=[1.57](mm), SLPI=[0.75](%),
                    LGI=[380.088](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs),   END=-1
*%-----------------|-----------------------------------------------------------|
*CONTINUOUS NASHYD   NHYD=["S-1-D1"], DT=[1]min, AREA=[21.67](ha),
*                    DWF=[0](cms), CN/C=[77],  IA=[4.67](mm),
*                    N=[3], TP=[1.066]hrs,
*                    Continuous simulation parameters:
*                    IaRECper=[4](hrs),
*                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                    InterEventTime=[12](hrs)
*                    Baseflow simulation parameters:
*                    BaseFlowOption=[1] ,
*                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
*                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
COMPUTE DUALHYD     NHYDin=["S-1-D1"], CINLET=[2.409](cms), NINLET=[1],
                    MajNHYD=["S-1-D1J"]
                    MinNHYD=["S-1-D1N"]
                    TMJSTO=[9999999](cu-m)
*%-----------------|-----------------------------------------------------------|
ADD HYD             NHYDsum=["S-1-D1S"], NHYDs to add=["S-1-D1J"+"S-1-D1N"]
*%-----------------|-----------------------------------------------------------|
ROUTE RESERVOIR     NHYDout=["S-1-D1R"] ,NHYDin=["S-1-D1S"] ,
                    RDT=[1](min),
                          TABLE of ( OUTFLOW-STORAGE ) values
                                      (cms) - (ha-m)
                                    [ 0.0     , 0.0 ]
                                    [ 0.2590, 0.8642 ]
                                    [    -1  ,  -1    ]  (max twenty pts)
                          NHYDovf=["S-1-D1Rovf"]
*%-----------------|-----------------------------------------------------------|
*   -JFSA 2021-02-25  "S-1-D2" and "S-1-D3" are part of S-1 sub-catchment. They are moved to drain before station 6215 on Jock River
*CONTINUOUS STANDHYD NHYD=["S-1-D2"], DT=[1](min), AREA=[18.67](ha), XIMP=[0.65], TIMP=[0.65], DWF=[0](cms),
*                    LOSS=[2], SCS curve number CN=[75], Pervious surfaces: IAper=[4.67](mm), SLPP=[2.0](%),
*                    LGP=[40](m), MNP=[0.25], SCP=[0](min), Impervious surfaces:
```

```
IAimp=[1.57](mm), SLPI=[0.75](%),
*                    LGI=[352.798](m), MNI=[0.013], SCI=[0](min),
*                    Continuous simulation parameters:
*                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
*                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                    InterEventTime=[12](hrs),   END=-1
*%-----------------|-------------------------------------------------------------|
*CONTINUOUS NASHYD   NHYD=["S-1-D2"], DT=[1]min, AREA=[18.67](ha),
*                    DWF=[0](cms), CN/C=[77],  IA=[4.67](mm),
*                    N=[3], TP=[1.120]hrs,
*                    Continuous simulation parameters:
*                    IaRECper=[4](hrs),
*                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                    InterEventTime=[12](hrs)
*                    Baseflow simulation parameters:
*                    BaseFlowOption=[1] ,
*                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
*                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-------------------------------------------------------------|
*COMPUTE DUALHYD     NHYDin=["S-1-D2"], CINLET=[2.062](cms), NINLET=[1],
*                    MajNHYD=["S-1-D2J"]
*                    MinNHYD=["S-1-D2N"]
*                    TMJSTO=[9999999](cu-m)
*%-----------------|-------------------------------------------------------------|
*ADD HYD             NHYDsum=["S-1-D2S"], NHYDs to add=["S-1-D2J"+"S-1-D2N"]
*%-----------------|-------------------------------------------------------------|
*ROUTE RESERVOIR     NHYDout=["S-1-D2R"] ,NHYDin=["S-1-D2S"] ,
*                    RDT=[1](min),
*                          TABLE of ( OUTFLOW-STORAGE ) values
*                                      (cms) - (ha-m)
*                                    [ 0.0     , 0.0 ]
*                                    [ 0.2231, 0.7445 ]
*                                    [    -1  ,  -1    ]  (max twenty pts)
*                          NHYDovf=["S-1-D2Rovf"]
*%-----------------|-------------------------------------------------------------|
*CONTINUOUS STANDHYD NHYD=["S-1-D3"], DT=[1](min), AREA=[6.79](ha), XIMP=[0.65],
TIMP=[0.65], DWF=[0](cms),
*                    LOSS=[2], SCS curve number CN=[75], Pervious surfaces:
IAper=[4.67](mm), SLPP=[2.0](%),
*                    LGP=[40](m), MNP=[0.25], SCP=[0](min), Impervious surfaces:
IAimp=[1.57](mm), SLPI=[0.75](%),
*                    LGI=[212.760](m), MNI=[0.013], SCI=[0](min),
*                    Continuous simulation parameters:
*                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
*                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                    InterEventTime=[12](hrs),   END=-1
*%-----------------|-------------------------------------------------------------|
*CONTINUOUS NASHYD   NHYD=["S-1-D3"], DT=[1]min, AREA=[6.79](ha),
*                    DWF=[0](cms), CN/C=[77],  IA=[4.67](mm),
*                    N=[3], TP=[1.281]hrs,
*                    Continuous simulation parameters:
*                    IaRECper=[4](hrs),
*                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                    InterEventTime=[12](hrs)
*                    Baseflow simulation parameters:
*                    BaseFlowOption=[1] ,
*                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
*                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-------------------------------------------------------------|
*COMPUTE DUALHYD     NHYDin=["S-1-D3"], CINLET=[0.719](cms), NINLET=[1],
*                    MajNHYD=["S-1-D3J"]
*                    MinNHYD=["S-1-D3N"]
*                    TMJSTO=[9999999](cu-m)
*%-----------------|-------------------------------------------------------------|
*ADD HYD             NHYDsum=["S-1-D3S"], NHYDs to add=["S-1-D3J"+"S-1-D3N"]
*%-----------------|-------------------------------------------------------------|
```

```
*ROUTE RESERVOIR     NHYDout=["S-1-D3R"] ,NHYDin=["S-1-D3S"] ,
*                    RDT=[1](min),
*                          TABLE of ( OUTFLOW-STORAGE ) values
*                                      (cms) - (ha-m)
*                                    [ 0.0     , 0.0 ]
*                                    [ 0.0811, 0.2708 ]
*                                    [    -1  ,  -1    ]  (max twenty pts)
*                          NHYDovf=["S-1-D3Rovf"]
*%-----------------|-----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["S-1-D4"], DT=[1](min), AREA=[3.28](ha), XIMP=[0.65],
TIMP=[0.65], DWF=[0](cms),
                    LOSS=[2], SCS curve number CN=[75], Pervious surfaces:
                    IAper=[4.67](mm), SLPP=[2.0](%),
                    LGP=[40](m), MNP=[0.25], SCP=[0](min), Impervious surfaces:
                    IAimp=[1.57](mm), SLPI=[0.75](%),
                    LGI=[147.874](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs),   END=-1
*%-----------------|-----------------------------------------------------------|
*CONTINUOUS NASHYD   NHYD=["S-1-D4"], DT=[1]min, AREA=[3.28](ha),
*                    DWF=[0](cms), CN/C=[77],  IA=[4.67](mm),
*                    N=[3], TP=[1.10]hrs,
*                    Continuous simulation parameters:
*                    IaRECper=[4](hrs),
*                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                    InterEventTime=[12](hrs)
*                    Baseflow simulation parameters:
*                    BaseFlowOption=[1] ,
*                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
*                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
COMPUTE DUALHYD     NHYDin=["S-1-D4"], CINLET=[0.421](cms), NINLET=[1],
                    MajNHYD=["S-1-D4J"]
                    MinNHYD=["S-1-D4N"]
                    TMJSTO=[9999999](cu-m)
*%-----------------|-----------------------------------------------------------|
ADD HYD             NHYDsum=["S-1-D4S"], NHYDs to add=["S-1-D4J"+"S-1-D4N"]
*%-----------------|-----------------------------------------------------------|
ROUTE RESERVOIR     NHYDout=["S-1-D4R"] ,NHYDin=["S-1-D4S"] ,
                    RDT=[1](min),
                          TABLE of ( OUTFLOW-STORAGE ) values
                                      (cms) - (ha-m)
                                    [ 0.0     , 0.0 ]
                                    [ 0.0392, 0.1308 ]
                                    [    -1  ,  -1    ]  (max twenty pts)
                          NHYDovf=["S-1-D4Rovf"]
*%-----------------|-----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["S-1-D5"], DT=[1](min), AREA=[12.84](ha), XIMP=[0.65],
TIMP=[0.65], DWF=[0](cms),
                    LOSS=[2], SCS curve number CN=[75], Pervious surfaces:
                    IAper=[4.67](mm), SLPP=[2.0](%),
                    LGP=[40](m), MNP=[0.25], SCP=[0](min), Impervious surfaces:
                    IAimp=[1.57](mm), SLPI=[0.75](%),
                    LGI=[292.57](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs),   END=-1
*%-----------------|-----------------------------------------------------------|
*CONTINUOUS NASHYD   NHYD=["S-1-D5"], DT=[1]min, AREA=[12.84](ha),
*                    DWF=[0](cms), CN/C=[77],  IA=[4.67](mm),
*                    N=[3], TP=[1.10]hrs,
*                    Continuous simulation parameters:
*                    IaRECper=[4](hrs),
```

```
*                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                    InterEventTime=[12](hrs)
*                    Baseflow simulation parameters:
*                    BaseFlowOption=[1] ,
*                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
*                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
COMPUTE DUALHYD     NHYDin=["S-1-D5"], CINLET=[1.5](cms), NINLET=[1],
                    MajNHYD=["S-1-D5J"]
                    MinNHYD=["S-1-D5N"]
                    TMJSTO=[9999999](cu-m)
*%-----------------|-----------------------------------------------------------|
ADD HYD             NHYDsum=["S-1-D5S"], NHYDs to add=["S-1-D5J"+"S-1-D5N"]
*%-----------------|-----------------------------------------------------------|
ROUTE RESERVOIR     NHYDout=["S-1-D5R"] ,NHYDin=["S-1-D5S"] ,
                    RDT=[1](min),
                          TABLE of ( OUTFLOW-STORAGE ) values
                                      (cms) - (ha-m)
                                    [ 0.0     , 0.0 ]
                                    [ 0.1535, 0.5120 ]
                                    [    -1  ,  -1    ]  (max twenty pts)
                          NHYDovf=["S-1-D5Rovf"]
*%-----------------|-----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["S-1-D6"], DT=[1](min), AREA=[1.75](ha), XIMP=[0.65],
TIMP=[0.65], DWF=[0](cms),
                    LOSS=[2], SCS curve number CN=[75], Pervious surfaces:
                    IAper=[4.67](mm), SLPP=[2.0](%),
                    LGP=[40](m), MNP=[0.25], SCP=[0](min), Impervious surfaces:
                    IAimp=[1.57](mm), SLPI=[0.75](%),
                    LGI=[108.01](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs),   END=-1
*%-----------------|-----------------------------------------------------------|
*CONTINUOUS NASHYD   NHYD=["S-1-D6"], DT=[1]min, AREA=[1.75](ha),
*                    DWF=[0](cms), CN/C=[77],  IA=[4.67](mm),
*                    N=[3], TP=[1.10]hrs,
*                    Continuous simulation parameters:
*                    IaRECper=[4](hrs),
*                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                    InterEventTime=[12](hrs)
*                    Baseflow simulation parameters:
*                    BaseFlowOption=[1] ,
*                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
*                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
COMPUTE DUALHYD     NHYDin=["S-1-D6"], CINLET=[0.232](cms), NINLET=[1],
                    MajNHYD=["S-1-D6J"]
                    MinNHYD=["S-1-D6N"]
                    TMJSTO=[9999999](cu-m)
*%-----------------|-----------------------------------------------------------|
ADD HYD             NHYDsum=["S-1-D6S"], NHYDs to add=["S-1-D6J"+"S-1-D6N"]
*%-----------------|-----------------------------------------------------------|
ROUTE RESERVOIR     NHYDout=["S-1-D6R"] ,NHYDin=["S-1-D6S"] ,
                    RDT=[1](min),
                          TABLE of ( OUTFLOW-STORAGE ) values
                                      (cms) - (ha-m)
                                    [ 0.0     , 0.0 ]
                                    [ 0.0209, 0.0698 ]
                                    [    -1  ,  -1    ]  (max twenty pts)
                          NHYDovf=["S-1-D6Rovf"]
*%-----------------|-----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["S-1-D7"], DT=[1](min), AREA=[2.03](ha), XIMP=[0.65],
TIMP=[0.65], DWF=[0](cms),
                    LOSS=[2], SCS curve number CN=[75], Pervious surfaces:
```

```
                     IAper=[4.67](mm), SLPP=[2.0](%),
                     LGP=[40](m), MNP=[0.25], SCP=[0](min), Impervious surfaces:
                     IAimp=[1.57](mm), SLPI=[0.75](%),
                     LGI=[116.33](m), MNI=[0.013], SCI=[0](min),
                     Continuous simulation parameters:
                     IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                     SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                     InterEventTime=[12](hrs),   END=-1
*%-----------------|-----------------------------------------------------------|
*CONTINUOUS NASHYD    NHYD=["S-1-D7"], DT=[1]min, AREA=[2.03](ha),
*                     DWF=[0](cms), CN/C=[77],  IA=[4.67](mm),
*                     N=[3], TP=[1.10]hrs,
*                     Continuous simulation parameters:
*                     IaRECper=[4](hrs),
*                     SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                     InterEventTime=[12](hrs)
*                     Baseflow simulation parameters:
*                     BaseFlowOption=[1] ,
*                     InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
*                     VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
COMPUTE DUALHYD      NHYDin=["S-1-D7"], CINLET=[0.265](cms), NINLET=[1],
                     MajNHYD=["S-1-D7J"]
                     MinNHYD=["S-1-D7N"]
                     TMJSTO=[9999999](cu-m)
*%-----------------|-----------------------------------------------------------|
ADD HYD              NHYDsum=["S-1-D7S"], NHYDs to add=["S-1-D7J"+"S-1-D7N"]
*%-----------------|-----------------------------------------------------------|
ROUTE RESERVOIR      NHYDout=["S-1-D7R"] ,NHYDin=["S-1-D7S"] ,
                     RDT=[1](min),
                           TABLE of ( OUTFLOW-STORAGE ) values
                                       (cms) - (ha-m)
                                     [ 0.0     , 0.0 ]
                                     [ 0.0243, 0.0810 ]
                                     [    -1  ,  -1    ]  (max twenty pts)
                           NHYDovf=["S-1-D7Rovf"]
*%-----------------|-----------------------------------------------------------|
*   -JFSA 2021-02-26  "S-1-D8" is a part of S-1 sub-catchment. It is moved to drain
before station 6016 on Jock River
*CONTINUOUS STANDHYD NHYD=["S-1-D8"], DT=[1](min), AREA=[5.27](ha), XIMP=[0.65],
TIMP=[0.65], DWF=[0](cms),
*                     LOSS=[2], SCS curve number CN=[75], Pervious surfaces:
IAper=[4.67](mm), SLPP=[2.0](%),
*                     LGP=[40](m), MNP=[0.25], SCP=[0](min), Impervious surfaces:
IAimp=[1.57](mm), SLPI=[0.75](%),
*                     LGI=[187.439](m), MNI=[0.013], SCI=[0](min),
*                     Continuous simulation parameters:
*                     IaRECper=[4](hrs),  IaRECimp=[4](hrs),
*                     SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                     InterEventTime=[12](hrs),   END=-1
*%-----------------|-----------------------------------------------------------|
*CONTINUOUS NASHYD    NHYD=["S-1-D8"], DT=[1]min, AREA=[5.27](ha),
*                     DWF=[0](cms), CN/C=[77],  IA=[4.67](mm),
*                     N=[3], TP=[1.10]hrs,
*                     Continuous simulation parameters:
*                     IaRECper=[4](hrs),
*                     SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                     InterEventTime=[12](hrs)
*                     Baseflow simulation parameters:
*                     BaseFlowOption=[1] ,
*                     InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
*                     VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
*COMPUTE DUALHYD      NHYDin=["S-1-D8"], CINLET=[2.279](cms), NINLET=[1],
*                     MajNHYD=["S-1-D8J"]
*                     MinNHYD=["S-1-D8N"]
```

```
*                    TMJSTO=[9999999](cu-m)
*%-----------------|-----------------------------------------------------------|
*ADD HYD             NHYDsum=["S-1-D8S"], NHYDs to add=["S-1-D8J"+"S-1-D8N"]
*%-----------------|-----------------------------------------------------------|
*ADD HYD             NHYDsum=["S-1-D"], NHYDs to add=["S-1-Okeefe"+"S-1"+"S-1-Fost"]
*%-----------------|-----------------------------------------------------------|
*COMPUTE DUALHYD     NHYDin=["S-1-D"], CINLET=[11.616](cms), NINLET=[1],
*                    MajNHYD=["S-1-D-MJ"]
*                    MinNHYD=["S-1-D-MN"]
*                    TMJSTO=[5974](cu-m)
*%-----------------|-----------------------------------------------------------|
*ADD HYD             NHYDsum=["S-1-DEV"], NHYDs to add=["S-1-D-MJ"+"S-1-D-MN"]
*%-----------------|-----------------------------------------------------------|
*ROUTE RESERVOIR     NHYDout=["S-1-D8R"] ,NHYDin=["S-1-D8S"] ,
*                    RDT=[1](min),
*                          TABLE of ( OUTFLOW-STORAGE ) values
*                                      (cms) - (ha-m)
*                                    [ 0.0     , 0.0 ]
*                                    [ 0.0630, 0.2102 ]
*                                    [    -1  ,  -1    ]  (max twenty pts)
*                          NHYDovf=["S-1-D8Rovf"]
*%-----------------|-----------------------------------------------------------|
*%-----------------|-----------------------------------------------------------|
*       -JFSA 2021-02-08 Clarke (MS_P2 and P2-OVF) and Clarke Undeveloped area (W_CLAR_UNDE) drain to Jock River at Station 5002 instead of Station 4534
*#    Catchment W_CLAR
*#    - To West Clarke Drain (south of the Jock)
*#    - Subdivision with 43% imp. as per Barrhaven South MSS
*#    - 2020-11-30 update CLARKE Tributary Drainage Area to  = 121 ha based on P598(04)-11
*#    - 2020-11-30 split CLARKE Drainage Area to MAJOR and ALL
*#*****************************************************************************
CONTINUOUS STANDHYD NHYD=["W_CLAR_MJ"], DT=[1]min, AREA=[1.772](ha),
                    XIMP=[0.46], TIMP=[0.59], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[77],
                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
                            LGI=[109](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[18](hrs),   END=-1
*%-----------------|-----------------------------------------------------------|
*COMPUTE DUALHYD     NHYDin=["W_CLAR_MJ"], CINLET=[0.213](cms), NINLET=[1],
*                    MajNHYD=["W_CLAR_MJj"]
*                    MinNHYD=["W_CLAR_MJn"]
*                    TMJSTO=[0.1](cu-m)
*%-----------------|-----------------------------------------------------------|
*# 5-Year + 12% Capture
ROUTE RESERVOIR     NHYDout=["W_CLAR_MJn"] ,NHYDin=["W_CLAR_MJ"] ,
                    RDT=[1](min),
                          TABLE of ( OUTFLOW-STORAGE ) values
                                      (cms) - (ha-m)
                                    [ 0.0     , 0.0 ]
                                    [ 0.213 , 0.0001 ]
                                    [    -1  ,  -1    ]  (max twenty pts)
                          NHYDovf=["W_CLAR_MJj"] ,
*%-----------------|-----------------------------------------------------------|
*     -Clarke_All area from  P 598(04)-11 = 120.207 ha, change to 127.298 ha based on GIS measurements,
*     -JFSA, 2021-01-19  update W_CLAR_ALL to (121.17-1.772=119.398) ha based on GIS measurements W_CLAR is 121.17 ha and W_CLAR_MJ is 1.772 ha
CONTINUOUS STANDHYD NHYD=["W_CLAR_ALL"], DT=[1]min, AREA=[119.398](ha),
                    XIMP=[0.60], TIMP=[0.65], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[77],
```

```
                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
                            LGI=[892.18](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[18](hrs),   END=-1
*%-----------------|-------------------------------------------------------------|
ADD HYD             NHYDsum=["W_CLAR"], NHYDs to add=["W_CLAR_ALL"+"W_CLAR_MJj"]
*%-----------------|-------------------------------------------------------------|
SAVE HYD            NHYD=["W_CLAR"],   # OF PCYCLES=[-1],  ICASEsh=[1]
                    HYD_COMMENT=["Total Flows to West Clarke"]
*#******************************************************************************
*#    West Clarke Pond 2
*#    - Rating curve obtained from Barrhaven South MSS modeling
*#    - Tributary Drainage Area to MSS Pond 2 = 241 ha
*#******************************************************************************
ROUTE RESERVOIR     NHYDout=["MS_P2"],  NHYDin=["W_CLAR"],
                    RDT=[1](min),
                          TABLE of ( OUTFLOW-STORAGE ) values
                                      (cms) - (ha-m)
                                    [   0.0 ,  0.0 ]
                                    [ 0.128 , 0.161 ]
                                    [ 0.138 , 0.409 ]
                                    [ 0.148 , 0.68 ]
                                    [ 0.227 , 0.931 ]
                                    [ 0.354 , 1.223 ]
                                    [ 0.505 , 1.52 ]
                                    [ 0.666 , 1.821 ]
                                    [ 0.831 , 2.123 ]
                                    [ 0.995 , 2.434 ]
                                    [ 1.069 , 2.583 ]
                                    [ 1.51 , 2.647 ]
                                    [ 4.904 , 2.861 ]
                                    [ 13.048 , 3.188 ]
                                    [ 23.745 , 3.523 ]
                                    [ 36.474 , 3.871 ]
                                    [ 45.938 , 4.127 ]
                                    [ 61.652 , 4.539 ]
                                    [   -1  ,  -1  ]  (max twenty pts)
                          NHYDovf=["P2-OVF"]
*%-----------------|-------------------------------------------------------------|
*#******************************************************************************
*     -JFSA, 2021-01-22  "W_CLAR_UNDE" (west of Clarke sub-catchment) discharges
directly to the jock river through a road side ditch on the west side of Borrisokane
road (station 6016)
*CONTINUOUS NASHYD   NHYD=["W_CLAR_UNDE"], DT=[1]min, AREA=[35.65](ha),
*                    DWF=[0](cms), CN/C=[77],  IA=[4.67](mm),
*                    N=[3], TP=[1.10]hrs,
*                    Continuous simulation parameters:
*                    IaRECper=[4](hrs),
*                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                    InterEventTime=[12](hrs)
*                    Baseflow simulation parameters:
*                    BaseFlowOption=[1] ,
*                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
*                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-------------------------------------------------------------|
ADD HYD             NHYDsum=["SN_CE"], NHYDs to
add=["N_CE"+"S-1-D4R"+"S-1-D5R"+"S-1-D4Rovf"+"S-1-D5Rovf"+"MS_P2"+"P2-OVF"]
*%-----------------|-------------------------------------------------------------|
SAVE HYD            NHYD=["SN_CE"],   # OF PCYCLES=[-1],  ICASEsh=[1]
                    HYD_COMMENT=["Total Flows before Station 5737 on Jock River"]
*%-----------------|-------------------------------------------------------------|
*# Channel X-Section obtained from RVCA Hydraulic Model - Station 5737
```

```
*# 2021-02-25 add station 5737 before station 5002. Station 5737 was extracted from the HEC-RAS model T:\PROJ\1474-16\Design\20201026-QuantityControlAnalysis\HEC-RAS\JockLidar2005
*# JFSA 2021-03-02  change the slope to 0.0175% instead of 0.02593 to stabilize the model
ROUTE CHANNEL        NHYDout=["5737"] ,NHYDin=["SN_CE"] ,
                     RDT=[1](min),
                     CHLGTH=[270](m),  CHSLOPE=[0.0175](%),
                                         FPSLOPE=[0.0175](%),
                     SECNUM=[1.0],       NSEG=[3]
                     ( SEGROUGH, SEGDIST (m))=
                       [0.050,-24.04
                       -0.035,23.92
                       0.050,1130.8] NSEG times
                     ( DISTANCE (m), ELEVATION (m))=
                     [-1060.52, 94 ]
                     [-268.6, 91.5 ]
                     [-259.43, 91.5 ]
                     [-179.48, 91.5 ]
                     [-67.9, 91.5 ]
                     [-59.21, 91.5 ]
                     [-33.19, 91 ]
                     [-26.08, 90.5 ]
                     [-24.04, 90 ]
                     [-13.14, 86.77 ]
                     [0, 85 ]
                     [14.68, 86.74 ]
                     [23.92, 90 ]
                     [25.78, 90.5 ]
                     [31.91, 91 ]
                     [91.95, 91.5 ]
                     [772.15, 92 ]
                     [961.49, 92.5 ]
                     [1044.69, 93 ]
                     [1130.8, 95 ]
*%-----------------|-------------------------------------------------------------|
ADD HYD              NHYDsum=["5002"], NHYDs to add=["5737"+"S-1-D1R"+"S-1-D6R"+"S-1-D7R"+"S-1-D1Rovf"+"S-1-D6Rovf"+"S-1-D7Rovf"]
*%-----------------|-------------------------------------------------------------|
SAVE HYD             NHYD=["5002"],   # OF PCYCLES=[-1],  ICASEsh=[1]
                     HYD_COMMENT=["Total Flows before Station 5002 on Jock River"]
*%-----------------|-------------------------------------------------------------|
*# Hydrograph from Node Cedarview Road routed to Node at West Clarke Drain
*# Channel X-Section obtained from RVCA Hydraulic Model - Station 5002
*# JFSA 2021-02-19 Change the slope from 0.01 % (as per Stantec Report 2007) to 0.0255 % so the model will be more stable and give reasonable results. It is justifiable as ROUTE CHANNELs aren't well suited to really flat slopes.
*# JFSA 2021-02-19 Change to three ROUTE CHANNEL with length 275 m each instead of one with 825 m length so the model will be more stable
*# JFSA 2021-02-26 change the length of 5002 route channel from 825 m to 736 m. That is because of adding station 5737 between station 6016 and station 5002. Then the length from station 5737 to station 5002 is 736 m. Change the slope from 0.0255 % to 0.09511 %
*
ROUTE CHANNEL        NHYDout=["N_WCa"] ,NHYDin=["5002"] ,
                     RDT=[1](min),
                     CHLGTH=[245.33333](m),  CHSLOPE=[0.09511](%),
                                         FPSLOPE=[0.09511](%),
                     SECNUM=[1.0],       NSEG=[3]
                     ( SEGROUGH, SEGDIST (m))=
                       [0.050,-37.5
                       -0.035,37.50
                       0.050,157.05] NSEG times
                     ( DISTANCE (m), ELEVATION (m))=
                     [-601.81, 91.5]
                     [-37.50, 90.00]
                     [-19.61, 87.04]
                     [0.00, 85.70]
```

```
                    [14.87, 86.93]
                    [37.50, 90.00]
                    [38.54, 90.50]
                    [42.23, 91]
                    [157.05,91.50]
*                    [161.44, 91.50]
*                    [236.48, 93.00]
*                    [385.47, 92.50]
*                    [390.78, 92.50]
*%-----------------|------------------------------------------------------------|
ROUTE CHANNEL       NHYDout=["N_WCb"] ,NHYDin=["N_WCa"] ,
                    RDT=[1](min),
                    CHLGTH=[245.33333](m),  CHSLOPE=[0.09511](%),
                                        FPSLOPE=[0.09511](%),
                    SECNUM=[1.0],       NSEG=[3]
                    ( SEGROUGH, SEGDIST (m))=
                      [0.050,-37.5
                      -0.035,37.50
                      0.050,157.05] NSEG times
                    ( DISTANCE (m), ELEVATION (m))=
                    [-601.81, 91.5]
                    [-37.50, 90.00]
                    [-19.61, 87.04]
                    [0.00, 85.70]
                    [14.87, 86.93]
                    [37.50, 90.00]
                    [38.54, 90.50]
                    [42.23, 91]
                    [157.05,91.50]
*%-----------------|------------------------------------------------------------|
ROUTE CHANNEL       NHYDout=["N_WC"] ,NHYDin=["N_WCb"] ,
                    RDT=[1](min),
                    CHLGTH=[245.33333](m),  CHSLOPE=[0.09511](%),
                                        FPSLOPE=[0.09511](%),
                    SECNUM=[1.0],       NSEG=[3]
                    ( SEGROUGH, SEGDIST (m))=
                      [0.050,-37.5
                      -0.035,37.50
                      0.050,157.05] NSEG times
                    ( DISTANCE (m), ELEVATION (m))=
                    [-601.81, 91.5]
                    [-37.50, 90.00]
                    [-19.61, 87.04]
                    [0.00, 85.70]
                    [14.87, 86.93]
                    [37.50, 90.00]
                    [38.54, 90.50]
                    [42.23, 91]
                    [157.05,91.50]
*#******************************************************************************
*       -JFSA 2021-02-08 Clarke (MS_P2 and P2-OVF) and Clarke Undeveloped area (W_CLAR_UNDE) drain to Jock River at Station 5002 instead of Station 4534
*ADD HYD             NHYDsum=["SN_WC"], NHYDs to add=["MS_P2"+"P2-OVF"+"N_WC"+"W_CLAR_UNDE"]
*%-----------------|------------------------------------------------------------|
*SAVE HYD            NHYD=["SN_WC"],   # OF PCYCLES=[-1],  ICASEsh=[1]
*                   HYD_COMMENT=["Total Flows at West Clarke Pond Outlet"]
*%-----------------|------------------------------------------------------------|
*# Hydrograph from Node West Clarke routed to Node at Kennedy - Burnett Drain
*# Channel X-Section obtained from RVCA Hydraulic Model - Station 4534
*#
ROUTE CHANNEL       NHYDout=["N_KB"] ,NHYDin=["N_WC"] ,
                    RDT=[1](min),
                    CHLGTH=[1020](m),  CHSLOPE=[0.0498](%),
                                        FPSLOPE=[0.0498](%),
                    SECNUM=[1.0],       NSEG=[3]
```

```
                    ( SEGROUGH, SEGDIST (m))=
                      [0.050,-23.63
                      -0.035,23.63
                      0.050,728.3] NSEG times
                    ( DISTANCE (m), ELEVATION (m))=
                    [-1082.01,94]
                    [-1028.17,92.5]
                    [-992.3,93.5]
                    [-279.34,90]
                    [-23.63,90]
                    [-13.45,87.13]
                    [-0.07,86.24]
                    [10.54,87.15]
                    [23.63,90]
                    [24.86,90.5]
                    [26.72,91]
                    [45.07,91.5]
                    [128.17,91.5]
                    [270.7,92.5]
                    [728.3,95]
*%-----------------|-------------------------------------------------------------|
*#******************************************************************************
*#     Catchment KEN_BU
*#     - To Kennedy-Burnett SWM Facility
*#     - Outlets to Fraser-Clarke drain (north of the Jock)
*#     - Medium density residential subdivision
*      - Add Kennedy Burnett model (Convert PCSWMM from NOVATECH June, 2020 to SWMHYMO)
*#******************************************************************************
*CONTINUOUS STANDHYD NHYD=["KEN_BU"], DT=[1]min, AREA=[281](ha),
*                    XIMP=[0.55], TIMP=[0.55], DWF=[0](cms), LOSS=[2],
*                    SCS curve number CN=[71],
*                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
*                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
*                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
*                            LGI=[1369](m), MNI=[0.013], SCI=[0](min),
*                    Continuous simulation parameters:
*                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
*                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                    InterEventTime=[18](hrs),   END=-1
*%-----------------|-------------------------------------------------------------|
*#******************************************************************************
*#    Existing Kennedy-Burnett SWM Facility
*#     - Rating curve obtained from URTKBP
*#     - Tributary Drainage Area to Pond = 160 ha
*#******************************************************************************
*ROUTE RESERVOIR     NHYDout=["KEN_P"],  NHYDin=["KEN_BU"],
*                    RDT=[1](min),
*                          TABLE of ( OUTFLOW-STORAGE ) values
*                                      (cms) - (ha-m)
*                                    [   0.0 ,  0.0 ]
*                                    [   0.13 , 0.26]
*                                    [   0.43 , 0.56]
*                                    [   0.67 , 0.90]
*                                    [   0.86 , 1.32]
*                                    [   1.01 , 1.79]
*                                    [   1.15 , 2.33]
*                                    [   -1  ,  -1  ]  (max twenty pts)
*                          NHYDovf=["KEN-OV"]
*%-----------------|-------------------------------------------------------------|
*      -JFSA, 2021-01-19  update all KEN_BU areas based on GIS measurements
CONTINUOUS STANDHYD NHYD=["KB-01A"], DT=[1]min, AREA=[40.82](ha), XIMP=[0.097],
TIMP=[0.4], DWF=[0](cms), LOSS=[1]:
                    Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                    F=[0.00](mm),
                    Pervious   areas: IAper=[4.67](mm), SLPP=[0.5](%), LGP=[40](m),
                    MNP=[0.250], SCP=[0](min),
```

```
                    Impervious areas: IAimp=[0.785](mm), SLPI=[0.5](%),
                    LGI=[521.664](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                    END=-1
*%-----------------|------------------------------------------------------------|
COMPUTE DUALHYD     NHYDin=["KB-01A"], CINLET=[3.6](cms), NINLET=[1],
                    MajNHYD=["KB-01A-MJ"]
                    MinNHYD=["KB-01A-MN"]
                    TMJSTO=[4995](cu-m)
*%-----------------|------------------------------------------------------------|
ADD HYD             NHYDsum=["KB-01A-S"], NHYDs to add=["KB-01A-MJ"+"KB-01A-MN"]
*%-----------------|------------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["KB-01B"], DT=[1]min, AREA=[31.1](ha), XIMP=[0.1875],
TIMP=[0.375], DWF=[0](cms), LOSS=[1]:
                    Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                    F=[0.00](mm),
                    Pervious   areas: IAper=[4.67](mm), SLPP=[0.42](%), LGP=[40](m),
                    MNP=[0.250], SCP=[0](min),
                    Impervious areas: IAimp=[0.785](mm), SLPI=[0.42](%),
                    LGI=[455.339](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                    END=-1
*%-----------------|------------------------------------------------------------|
COMPUTE DUALHYD     NHYDin=["KB-01B"], CINLET=[1.585](cms), NINLET=[1],
                    MajNHYD=["KB-01B-MJ"]
                    MinNHYD=["KB-01B-MN"]
                    TMJSTO=[6075](cu-m)
*%-----------------|------------------------------------------------------------|
ADD HYD             NHYDsum=["KB-01B-S"], NHYDs to add=["KB-01B-MJ"+"KB-01B-MN"]
*%-----------------|------------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["KB-01C"], DT=[1]min, AREA=[13.78](ha), XIMP=[0.2045],
TIMP=[0.409], DWF=[0](cms), LOSS=[1]:
                    Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                    F=[0.00](mm),
                    Pervious   areas: IAper=[4.67](mm), SLPP=[2.0](%), LGP=[40](m),
                    MNP=[0.250], SCP=[0](min),
                    Impervious areas: IAimp=[0.785](mm), SLPI=[0.5](%),
                    LGI=[303.095](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                    END=-1
*%-----------------|------------------------------------------------------------|
COMPUTE DUALHYD     NHYDin=["KB-01C"], CINLET=[1.35](cms), NINLET=[1],
                    MajNHYD=["KB-01C-MJ"]
                    MinNHYD=["KB-01C-MN"]
                    TMJSTO=[1880](cu-m)
*%-----------------|------------------------------------------------------------|
ADD HYD             NHYDsum=["KB-01C-S"], NHYDs to add=["KB-01C-MJ"+"KB-01C-MN"]
*%-----------------|------------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["KB-03"], DT=[1]min, AREA=[84.78](ha), XIMP=[0.197],
TIMP=[0.394], DWF=[0](cms), LOSS=[1]:
                    Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                    F=[0.00](mm),
                    Pervious   areas: IAper=[4.67](mm), SLPP=[2.0](%), LGP=[40](m),
                    MNP=[0.250], SCP=[0](min),
                    Impervious areas: IAimp=[0.785](mm), SLPI=[0.63](%),
                    LGI=[751.798](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                    END=-1
*%-----------------|------------------------------------------------------------|
COMPUTE DUALHYD     NHYDin=["KB-03"], CINLET=[5.27](cms), NINLET=[1],
                    MajNHYD=["KB-03-MJ"]
                    MinNHYD=["KB-03-MN"]
```

```
                        TMJSTO=[15500](cu-m)
*%-----------------|-----------------------------------------------------------|
ADD HYD                 NHYDsum=["KB-03-S"], NHYDs to add=["KB-03-MJ"+"KB-03-MN"]
*%-----------------|-----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["KB-04"], DT=[1]min, AREA=[6.95](ha), XIMP=[0.85],
TIMP=[0.85], DWF=[0](cms), LOSS=[1]:
                        Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                        F=[0.00](mm),
                        Pervious   areas: IAper=[4.67](mm), SLPP=[2.0](%), LGP=[40](m),
                        MNP=[0.250], SCP=[0](min),
                        Impervious areas: IAimp=[0.942](mm), SLPI=[0.5](%),
                        LGI=[215.252](m), MNI=[0.013], SCI=[0](min),
                        Continuous simulation parameters:
                        IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                        END=-1
*%-----------------|-----------------------------------------------------------|
COMPUTE DUALHYD         NHYDin=["KB-04"], CINLET=[0.503](cms), NINLET=[1],
                        MajNHYD=["KB-04-MJ"]
                        MinNHYD=["KB-04-MN"]
                        TMJSTO=[1972](cu-m)
*%-----------------|-----------------------------------------------------------|
ADD HYD                 NHYDsum=["KB-04-S"], NHYDs to add=["KB-04-MJ"+"KB-04-MN"]
*%-----------------|-----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["KB-05"], DT=[1]min, AREA=[5.19](ha), XIMP=[0.93],
TIMP=[0.93], DWF=[0](cms), LOSS=[1]:
                        Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                        F=[0.00](mm),
                        Pervious   areas: IAper=[4.67](mm), SLPP=[2.0](%), LGP=[40](m),
                        MNP=[0.250], SCP=[0](min),
                        Impervious areas: IAimp=[1.57](mm), SLPI=[0.5](%),
                        LGI=[186.011](m), MNI=[0.013], SCI=[0](min),
                        Continuous simulation parameters:
                        IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                        END=-1
*%-----------------|-----------------------------------------------------------|
*%-----------------|-----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["KB-06"], DT=[1]min, AREA=[12.93](ha), XIMP=[0.873],
TIMP=[0.873], DWF=[0](cms), LOSS=[1]:
                        Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                        F=[0.00](mm),
                        Pervious   areas: IAper=[4.67](mm), SLPP=[2.0](%), LGP=[40](m),
                        MNP=[0.250], SCP=[0](min),
                        Impervious areas: IAimp=[0.942](mm), SLPI=[4.75](%),
                        LGI=[293.598](m), MNI=[0.013], SCI=[0](min),
                        Continuous simulation parameters:
                        IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                        END=-1
*%-----------------|-----------------------------------------------------------|
COMPUTE DUALHYD         NHYDin=["KB-06"], CINLET=[2.262](cms), NINLET=[1],
                        MajNHYD=["KB-06-MJ"]
                        MinNHYD=["KB-06-MN"]
                        TMJSTO=[1950](cu-m)
*%-----------------|-----------------------------------------------------------|
ADD HYD                 NHYDsum=["KB-06-S"], NHYDs to add=["KB-06-MJ"+"KB-06-MN"]
*%-----------------|-----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["KB-11"], DT=[1]min, AREA=[4.03](ha), XIMP=[0.675],
TIMP=[0.675], DWF=[0](cms), LOSS=[1]:
                        Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                        F=[0.00](mm),
                        Pervious   areas: IAper=[4.67](mm), SLPP=[2.0](%), LGP=[40](m),
                        MNP=[0.250], SCP=[0](min),
                        Impervious areas: IAimp=[0.785](mm), SLPI=[2.0](%),
                        LGI=[163.911](m), MNI=[0.013], SCI=[0](min),
                        Continuous simulation parameters:
                        IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                        END=-1
```

```
*%-----------------|-----------------------------------------------------------|
COMPUTE DUALHYD     NHYDin=["KB-11"], CINLET=[0.5773](cms), NINLET=[1],
                    MajNHYD=["KB-11-MJ"]
                    MinNHYD=["KB-11-MN"]
                    TMJSTO=[597](cu-m)
*%-----------------|-----------------------------------------------------------|
ADD HYD             NHYDsum=["KB-11-S"], NHYDs to add=["KB-11-MJ"+"KB-11-MN"]
*%-----------------|-----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["S1"], DT=[1]min, AREA=[4.99](ha), XIMP=[0.93], TIMP=[0.93],
DWF=[0](cms), LOSS=[1]:
                    Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                    F=[0.00](mm),
                    Pervious   areas: IAper=[4.67](mm), SLPP=[2.0](%), LGP=[40](m),
                    MNP=[0.250], SCP=[0](min),
                    Impervious areas: IAimp=[1.57](mm), SLPI=[2.0](%),
                    LGI=[182.392](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                    END=-1
*%-----------------|-----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["KB-15"], DT=[1]min, AREA=[2.15](ha), XIMP=[0.79],
TIMP=[0.79], DWF=[0](cms), LOSS=[1]:
                    Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                    F=[0.00](mm),
                    Pervious   areas: IAper=[4.67](mm), SLPP=[2.0](%), LGP=[40](m),
                    MNP=[0.250], SCP=[0](min),
                    Impervious areas: IAimp=[0.157](mm), SLPI=[0.3](%),
                    LGI=[119.722](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                    END=-1
*%-----------------|-----------------------------------------------------------|
*%-----------------|-----------------------------------------------------------|
ADD HYD             NHYDsum=["KB-P1"], NHYDs to
add=["KB-01A-S"+"KB-01B-S"+"KB-01C-S"+"KB-03-S"+"KB-04-S"+"KB-05"+"KB-06-S"+"KB-11-S"+"KB
-15"+"S1"]
*%-----------------|-----------------------------------------------------------|
ROUTE RESERVOIR     NHYDout=["KB-P1R"],  NHYDin=["KB-P1"],
                    RDT=[1](min),
                          TABLE of ( OUTFLOW-STORAGE ) values
                                    (cms) - (ha-m)
                                [   0.0 ,  0.0 ]
                                [0.076,0.003]
                                [0.088,0.006]
                                [0.136,0.011]
                                [0.301,0.017]
                                [0.454,0.027]
                                [0.631,0.041]
                                [1.173,0.068]
                                [1.91,0.111]
                                [4.847,0.231]
                                [9.813,0.436]
                                [12.134,0.617]
                                [12.438,0.732]
                                [12.424,0.811]
                                [12.425,0.894]
                                [   -1  ,  -1  ]  (max twenty pts)
                          NHYDovf=["KB-P1ovf"]
*%-----------------|-----------------------------------------------------------|
ADD HYD             NHYDsum=["KB-Pond1"], NHYDs to add=["KB-P1R"+"KB-P1ovf"]
*%-----------------|-----------------------------------------------------------|
SAVE HYD            NHYD=["KB-Pond1"],   # OF PCYCLES=[-1],  ICASEsh=[1]
                    HYD_COMMENT=["Total Flows at KB first pond"]
*%-----------------|-----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["KB-07"], DT=[1]min, AREA=[10.86](ha), XIMP=[0.86],
TIMP=[0.86], DWF=[0](cms), LOSS=[1]:
```

```
                         Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                         F=[0.00](mm),
                         Pervious   areas: IAper=[4.67](mm), SLPP=[2.0](%), LGP=[40](m),
                         MNP=[0.250], SCP=[0](min),
                         Impervious areas: IAimp=[0.785](mm), SLPI=[2.0](%),
                         LGI=[269.072](m), MNI=[0.013], SCI=[0](min),
                         Continuous simulation parameters:
                         IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                         END=-1
*%-----------------|-------------------------------------------------------------|
COMPUTE DUALHYD          NHYDin=["KB-07"], CINLET=[2.094](cms), NINLET=[1],
                         MajNHYD=["KB-07-MJ"]
                         MinNHYD=["KB-07-MN"]
                         TMJSTO=[1378](cu-m)
*%-----------------|-------------------------------------------------------------|
ADD HYD                  NHYDsum=["KB-07-S"], NHYDs to add=["KB-07-MJ"+"KB-07-MN"]
*%-----------------|-------------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["KB-08"], DT=[1]min, AREA=[6.61](ha), XIMP=[0.64],
TIMP=[0.64], DWF=[0](cms), LOSS=[1]:
                         Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                         F=[0.00](mm),
                         Pervious   areas: IAper=[4.67](mm), SLPP=[2.0](%), LGP=[40](m),
                         MNP=[0.250], SCP=[0](min),
                         Impervious areas: IAimp=[0.785](mm), SLPI=[2.0](%),
                         LGI=[209.921](m), MNI=[0.013], SCI=[0](min),
                         Continuous simulation parameters:
                         IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                         END=-1
*%-----------------|-------------------------------------------------------------|
COMPUTE DUALHYD          NHYDin=["KB-08"], CINLET=[1.058](cms), NINLET=[1],
                         MajNHYD=["KB-08-MJ"]
                         MinNHYD=["KB-08-MN"]
                         TMJSTO=[787](cu-m)
*%-----------------|-------------------------------------------------------------|
ADD HYD                  NHYDsum=["KB-08-S"], NHYDs to add=["KB-08-MJ"+"KB-08-MN"]
*%-----------------|-------------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["KB-09"], DT=[1]min, AREA=[2.6](ha), XIMP=[0.86],
TIMP=[0.86], DWF=[0](cms), LOSS=[1]:
                         Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                         F=[0.00](mm),
                         Pervious   areas: IAper=[4.67](mm), SLPP=[2.0](%), LGP=[40](m),
                         MNP=[0.250], SCP=[0](min),
                         Impervious areas: IAimp=[1.57](mm), SLPI=[2.0](%),
                         LGI=[131.656](m), MNI=[0.013], SCI=[0](min),
                         Continuous simulation parameters:
                         IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                         END=-1
*%-----------------|-------------------------------------------------------------|
*%-----------------|-------------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["KB-10_1"], DT=[1]min, AREA=[2.37](ha),  XIMP=[0.86],
TIMP=[0.86], DWF=[0](cms), LOSS=[1]:
                         Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                         F=[0.00](mm),
                         Pervious   areas: IAper=[4.67](mm), SLPP=[2.0](%), LGP=[40](m),
                         MNP=[0.250], SCP=[0](min),
                         Impervious areas: IAimp=[1.57](mm), SLPI=[2.0](%),
                         LGI=[125.698](m), MNI=[0.013], SCI=[0](min),
                         Continuous simulation parameters:
                         IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                         END=-1
*%-----------------|-------------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["KB-10_2"], DT=[1]min, AREA=[1.14](ha), XIMP=[0.86],
TIMP=[0.86], DWF=[0](cms), LOSS=[1]:
                         Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                         F=[0.00](mm),
                         Pervious   areas: IAper=[4.67](mm), SLPP=[2.0](%), LGP=[40](m),
```

```
                    MNP=[0.250], SCP=[0](min),
                    Impervious areas: IAimp=[1.57](mm), SLPI=[2.0](%), LGI=[87.178](m),
                    MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                    END=-1
*%-----------------|-----------------------------------------------------------|
*%-----------------|-----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["KB-12"], DT=[1]min, AREA=[4.86](ha), XIMP=[0.79],
TIMP=[0.79], DWF=[0](cms), LOSS=[1]:
                    Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                    F=[0.00](mm),
                    Pervious   areas: IAper=[4.67](mm), SLPP=[2.0](%), LGP=[40](m),
                    MNP=[0.250], SCP=[0](min),
                    Impervious areas: IAimp=[1.099](mm), SLPI=[2.0](%),
                    LGI=[180.000](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                    END=-1
*%-----------------|-----------------------------------------------------------|
COMPUTE DUALHYD     NHYDin=["KB-12"], CINLET=[0.8665](cms), NINLET=[1],
                    MajNHYD=["KB-12-MJ"]
                    MinNHYD=["KB-12-MN"]
                    TMJSTO=[632](cu-m)
*%-----------------|-----------------------------------------------------------|
ADD HYD             NHYDsum=["KB-12-S"], NHYDs to add=["KB-12-MJ"+"KB-12-MN"]
*%-----------------|-----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["KB-13"], DT=[1]min, AREA=[10.19](ha), XIMP=[0.64],
TIMP=[0.64], DWF=[0](cms), LOSS=[1]:
                    Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                    F=[0.00](mm),
                    Pervious   areas: IAper=[4.67](mm), SLPP=[2.0](%), LGP=[40](m),
                    MNP=[0.250], SCP=[0](min),
                    Impervious areas: IAimp=[0.785](mm), SLPI=[2.0](%),
                    LGI=[260.640](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                    END=-1
*%-----------------|-----------------------------------------------------------|
COMPUTE DUALHYD     NHYDin=["KB-13"], CINLET=[1.722](cms), NINLET=[1],
                    MajNHYD=["KB-13-MJ"]
                    MinNHYD=["KB-13-MN"]
                    TMJSTO=[1077](cu-m)
*%-----------------|-----------------------------------------------------------|
ADD HYD             NHYDsum=["KB-13-S"], NHYDs to add=["KB-13-MJ"+"KB-13-MN"]
*%-----------------|-----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["KB-14"], DT=[1]min, AREA=[5.47](ha), XIMP=[0.64],
TIMP=[0.64], DWF=[0](cms), LOSS=[1]:
                    Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                    F=[0.00](mm),
                    Pervious   areas: IAper=[4.67](mm), SLPP=[2.0](%), LGP=[40](m),
                    MNP=[0.250], SCP=[0](min),
                    Impervious areas: IAimp=[0.785](mm), SLPI=[2.0](%),
                    LGI=[190.962](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                    END=-1
*%-----------------|-----------------------------------------------------------|
COMPUTE DUALHYD     NHYDin=["KB-14"], CINLET=[0.8734](cms), NINLET=[1],
                    MajNHYD=["KB-14-MJ"]
                    MinNHYD=["KB-14-MN"]
                    TMJSTO=[631](cu-m)
*%-----------------|-----------------------------------------------------------|
ADD HYD             NHYDsum=["KB-14-S"], NHYDs to add=["KB-14-MJ"+"KB-14-MN"]
*%-----------------|-----------------------------------------------------------|
*%-----------------|-----------------------------------------------------------|
```

```
CONTINUOUS STANDHYD NHYD=["KB-16_2"], DT=[1]min, AREA=[3.42](ha), XIMP=[0.71],
TIMP=[0.71], DWF=[0](cms), LOSS=[1]:
                    Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                    F=[0.00](mm),
                    Pervious   areas: IAper=[4.67](mm), SLPP=[2.0](%), LGP=[40](m),
                    MNP=[0.250], SCP=[0](min),
                    Impervious areas: IAimp=[0.157](mm), SLPI=[0.3](%),
                    LGI=[150.997](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                    END=-1
*%-----------------|-----------------------------------------------------------|
ADD HYD             NHYDsum=["KB-P2"], NHYDs to
add=["KB-Pond1"+"KB-07-S"+"KB-08-S"+"KB-09"+"KB-10_1"+"KB-10_2"+"KB-12-S"+"KB-13-S"+"KB-1
4-S"+"KB-16_2"]
*%-----------------|-----------------------------------------------------------|
ROUTE RESERVOIR     NHYDout=["KB-P2R"],  NHYDin=["KB-P2"],
                    RDT=[1](min),
                          TABLE of ( OUTFLOW-STORAGE ) values
                                      (cms) - (ha-m)
                                    [   0.0 ,  0.0 ]
                                    [0.053,0.005]
                                    [0.132,0.009]
                                    [0.269,0.014]
                                    [0.455,0.023]
                                    [0.699,0.037]
                                    [0.947,0.056]
                                    [1.853,0.09]
                                    [2.712,0.146]
                                    [6.626,0.287]
                                    [11.228,0.515]
                                    [14.885,0.738]
                                    [16.473,0.893]
                                    [17.311,0.998]
                                    [17.633,1.063]
                                    [17.634,1.112]
                                    [   -1  ,  -1  ]  (max twenty pts)
                          NHYDovf=["KB-P2ovf"]
*%-----------------|-----------------------------------------------------------|
ADD HYD             NHYDsum=["KB-Pond2"], NHYDs to add=["KB-P2R"+"KB-P2ovf"]
*%-----------------|-----------------------------------------------------------|
SAVE HYD            NHYD=["KB-Pond2"],   # OF PCYCLES=[-1],  ICASEsh=[1]
                    HYD_COMMENT=["Total Flows at KB second pond"]
*%-----------------|-----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["KB-16_1"], DT=[1]min, AREA=[2.8](ha), XIMP=[0.75],
TIMP=[0.75], DWF=[0](cms), LOSS=[1]:
                    Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                    F=[0.00](mm),
                    Pervious   areas: IAper=[4.67](mm), SLPP=[2.0](%), LGP=[40](m),
                    MNP=[0.250], SCP=[0](min),
                    Impervious areas: IAimp=[0.157](mm), SLPI=[0.3](%),
                    LGI=[136.626](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                    END=-1
*%-----------------|-----------------------------------------------------------|
ADD HYD             NHYDsum=["KB-P3"], NHYDs to add=["KB-Pond2"+"KB-16_1"]
*%-----------------|-----------------------------------------------------------|
*%-----------------|-----------------------------------------------------------|
* One inflow node from pond 3 is added to the model (ROUTE RESERVOIR)
* Another inflow node from right side of pond 3 is not added to the model
ROUTE RESERVOIR     NHYDout=["KB-P3R"],  NHYDin=["KB-P3"],
                    RDT=[1](min),
                          TABLE of ( OUTFLOW-STORAGE ) values
                                      (cms) - (ha-m)
                                    [   0.0 ,  0.0 ]
```

```
                                    [0.051,0.002]
                                    [0.048,0.003]
                                    [0.057,0.029]
                                    [0.089,0.045]
                                    [0.133,0.069]
                                    [0.199,0.106]
                                    [0.321,0.172]
                                    [1.029,0.306]
                                    [4.036,0.527]
                                    [8.332,0.761]
                                    [11.727,0.941]
                                    [14.125,1.067]
                                    [15.675,1.149]
                                    [16.555,1.196]
                                    [16.911,1.214]
                                    [   -1  ,  -1  ]   (max twenty pts)
                          NHYDovf=["KB-P3ovf"]
*%-----------------|-----------------------------------------------------------|
ADD HYD             NHYDsum=["KB-Pond3"], NHYDs to add=["KB-P3R"+"KB-P3ovf"]
*%-----------------|-----------------------------------------------------------|
SAVE HYD            NHYD=["KB-Pond3"],   # OF PCYCLES=[-1],  ICASEsh=[1]
                    HYD_COMMENT=["Total Flows at KB third pond"]
*%-----------------|-----------------------------------------------------------|
*#******************************************************************************
*#    EXISTING / PROPOSED Subcatchments (Kennedy-Burnett SWM Facility (118080), SWM Modeling Approach, NOVATECH Report June, 2020)
*#    - TO FRASER-CLARKE DRAIN
*#******************************************************************************
CONTINUOUS STANDHYD NHYD=["FC-01"], DT=[1]min, AREA=[8.03](ha), XIMP=[0.47], TIMP=[0.47], DWF=[0](cms), LOSS=[1]:
                    Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr), F=[0.00](mm),
                    Pervious   areas: IAper=[4.67](mm), SLPP=[2.0](%), LGP=[40](m), MNP=[0.250], SCP=[0](min),
                    Impervious areas: IAimp=[1.57](mm), SLPI=[1.0](%), LGI=[231.373](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs), END=-1
*%-----------------|-----------------------------------------------------------|
COMPUTE DUALHYD     NHYDin=["FC-01"], CINLET=[0.756](cms), NINLET=[1],
                    MajNHYD=["FC-01-MJ"]
                    MinNHYD=["FC-01-MN"]
                    TMJSTO=[714](cu-m)
*%-----------------|-----------------------------------------------------------|
ADD HYD             NHYDsum=["FC-01-S"], NHYDs to add=["FC-01-MJ"+"FC-01-MN"]
*%-----------------|-----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["FC-02"], DT=[1]min, AREA=[16.05](ha), XIMP=[0.93], TIMP=[0.93], DWF=[0](cms), LOSS=[1]:
                    Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr), F=[0.00](mm),
                    Pervious   areas: IAper=[4.67](mm), SLPP=[2.0](%), LGP=[40](m), MNP=[0.250], SCP=[0](min),
                    Impervious areas: IAimp=[1.57](mm), SLPI=[1.0](%), LGI=[327.109](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs), END=-1
*%-----------------|-----------------------------------------------------------|
COMPUTE DUALHYD     NHYDin=["FC-02"], CINLET=[1.159](cms), NINLET=[1],
                    MajNHYD=["FC-02-MJ"]
                    MinNHYD=["FC-02-MN"]
                    TMJSTO=[2385](cu-m)
*%-----------------|-----------------------------------------------------------|
ADD HYD             NHYDsum=["FC-02-S"], NHYDs to add=["FC-02-MJ"+"FC-02-MN"]
*%-----------------|-----------------------------------------------------------|
```

```
CONTINUOUS STANDHYD NHYD=["FC-03"], DT=[1]min, AREA=[7.37](ha), XIMP=[0.64],
TIMP=[0.64], DWF=[0](cms), LOSS=[1]:
                    Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                    F=[0.00](mm),
                    Pervious   areas: IAper=[4.67](mm), SLPP=[2.0](%), LGP=[40](m),
                    MNP=[0.250], SCP=[0](min),
                    Impervious areas: IAimp=[1.57](mm), SLPI=[1.0](%),
                    LGI=[221.660](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                    END=-1
*%-----------------|-----------------------------------------------------------|
COMPUTE DUALHYD     NHYDin=["FC-03"], CINLET=[0.358](cms), NINLET=[1],
                    MajNHYD=["FC-03-MJ"]
                    MinNHYD=["FC-03-MN"]
                    TMJSTO=[1131](cu-m)
*%-----------------|-----------------------------------------------------------|
ADD HYD             NHYDsum=["FC-03-S"], NHYDs to add=["FC-03-MJ"+"FC-03-MN"]
*%-----------------|-----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["FC-04"], DT=[1]min, AREA=[12.87](ha), XIMP=[0.64],
TIMP=[0.64], DWF=[0](cms), LOSS=[1]:
                    Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                    F=[0.00](mm),
                    Pervious   areas: IAper=[4.67](mm), SLPP=[2.0](%), LGP=[40](m),
                    MNP=[0.250], SCP=[0](min),
                    Impervious areas: IAimp=[1.57](mm), SLPI=[1.0](%),
                    LGI=[292.916](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                    END=-1
*%-----------------|-----------------------------------------------------------|
COMPUTE DUALHYD     NHYDin=["FC-04"], CINLET=[0.741](cms), NINLET=[1],
                    MajNHYD=["FC-04-MJ"]
                    MinNHYD=["FC-04-MN"]
                    TMJSTO=[1794](cu-m)
*%-----------------|-----------------------------------------------------------|
ADD HYD             NHYDsum=["FC-04-S"], NHYDs to add=["FC-04-MJ"+"FC-04-MN"]
*%-----------------|-----------------------------------------------------------|
*#****************************************************************************
*#    PROPOSED Subcatchments (Kennedy-Burnett SWM Facility (118080), SWM Modeling
Approach, NOVATECH Report June, 2020)
*#    - TO JOCK RIVER
*#****************************************************************************
CONTINUOUS STANDHYD NHYD=["JR-01"], DT=[1]min, AREA=[8.24](ha), XIMP=[0.64],
TIMP=[0.64], DWF=[0](cms), LOSS=[1]:
                    Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                    F=[0.00](mm),
                    Pervious   areas: IAper=[4.67](mm), SLPP=[2.0](%), LGP=[40](m),
                    MNP=[0.250], SCP=[0](min),
                    Impervious areas: IAimp=[1.57](mm), SLPI=[1.0](%),
                    LGI=[234.379](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                    END=-1
*%-----------------|-----------------------------------------------------------|
COMPUTE DUALHYD     NHYDin=["JR-01"], CINLET=[0.563](cms), NINLET=[1],
                    MajNHYD=["JR-01-MJ"]
                    MinNHYD=["JR-01-MN"]
                    TMJSTO=[1040](cu-m)
*%-----------------|-----------------------------------------------------------|
ADD HYD             NHYDsum=["JR-01-S"], NHYDs to add=["JR-01-MJ"+"JR-01-MN"]
*%-----------------|-----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["JR-02"], DT=[1]min, AREA=[1.59](ha), XIMP=[0.64],
TIMP=[0.64], DWF=[0](cms), LOSS=[1]:
                    Horton: Fo=[76.20](mm/hr), Fc=[13.20](mm/hr), DCAY=[4.14](/hr),
                    F=[0.00](mm),
```

```
                        Pervious   areas: IAper=[4.67](mm), SLPP=[2.0](%), LGP=[40](m),
                        MNP=[0.250], SCP=[0](min),
                        Impervious areas: IAimp=[1.57](mm), SLPI=[1.0](%),
                        LGI=[102.956](m), MNI=[0.013], SCI=[0](min),
                        Continuous simulation parameters:
                        IaRECper=[4](hrs),  IaRECimp=[4](hrs), InterEventTime=[12](hrs),
                        END=-1
*%-----------------|-------------------------------------------------------------|
COMPUTE DUALHYD         NHYDin=["JR-02"], CINLET=[0.153](cms), NINLET=[1],
                        MajNHYD=["JR-02-MJ"]
                        MinNHYD=["JR-02-MN"]
                        TMJSTO=[153](cu-m)
*%-----------------|-------------------------------------------------------------|
ADD HYD                 NHYDsum=["JR-02-S"], NHYDs to add=["JR-02-MJ"+"JR-02-MN"]
*%-----------------|-------------------------------------------------------------|
*#******************************************************************************
*#    Catchment FRASER
*#    - To Fraser-Clarke drain (north of the Jock)
*#    - Developed land with assumed 43% imp.
*#    - 2020-12-17 Change Fraser area to be 35.1 as measured from QGIS
*#    - 2020-12-17 All Fraser is undeveloped (Nashyd)
*#******************************************************************************
CONTINUOUS NASHYD       NHYD=["FRASER-DRN"], DT=[1]min, AREA=[13.65](ha),
                        DWF=[0](cms), CN/C=[77],  IA=[4.67](mm),
                        N=[3], TP=[0.4258]hrs,
                        Continuous simulation parameters:
                        IaRECper=[4](hrs),
                        SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                        InterEventTime=[12](hrs)
                        Baseflow simulation parameters:
                        BaseFlowOption=[1] ,
                        InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                        VHydCond=[0.055](mm/hr),   END=-1
*
CONTINUOUS STANDHYD NHYD=["FRASER-D"], DT=[1]min, AREA=[21.61](ha),
                        XIMP=[0.585], TIMP=[0.585], DWF=[0](cms), LOSS=[2],
                        SCS curve number CN=[80],
                        Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                                LGP=[40](m), MNP=[0.25], SCP=[0](min),
                        Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
                                LGI=[379.561](m), MNI=[0.013], SCI=[0](min),
                        Continuous simulation parameters:
                        IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                        SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                        InterEventTime=[18](hrs),   END=-1
*%-----------------|-------------------------------------------------------------|
COMPUTE DUALHYD         NHYDin=["FRASER-D"], CINLET=[2.281](cms), NINLET=[1],
                        MajNHYD=["FRASER-J"]
                        MinNHYD=["FRASER-N"]
                        TMJSTO=[9999999](cu-m)
*%-----------------|-------------------------------------------------------------|
ADD HYD                 NHYDsum=["FRASER-S"], NHYDs to add=["FRASER-J"+"FRASER-N"]
*%-----------------|-------------------------------------------------------------|
*ROUTE RESERVOIR         NHYDout=["MS_P20"],  NHYDin=["FRASER"],
*                        RDT=[1](min),
*                              TABLE of ( OUTFLOW-STORAGE ) values
*                                          (cms) - (ha-m)
*                                        [   0.0 ,  0.0 ]
*                                        [   0.04 , 0.36]
*                                        [   -1  ,  -1  ]  (max twenty pts)
*                              NHYDovf=["P20-OVF"]
*%-----------------|-------------------------------------------------------------|
ADD HYD                 NHYDsum=["4241"], NHYDs to
add=["KB-Pond3"+"S-1-B"+"FRASER-DRN"+"FRASER-S"+"N_KB"+"FC-01-S"+"FC-02-S"+"FC-03-S"]
*%-----------------|-------------------------------------------------------------|
SAVE HYD                NHYD=["4241"],   # OF PCYCLES=[-1],  ICASEsh=[1]
```

```
                    HYD_COMMENT=["Total Flows at Ken-Burnett Outlet"]
*%-----------------|------------------------------------------------------------|
*# Hydrograph from Node Ken-Burnett to station 3633
*# Channel X-Section obtained from RVCA Hydraulic Model - Station 4241
*#
ROUTE CHANNEL       NHYDout=["4241-out"], NHYDin=["4241"],  RDT=[1](min),
                    CHLGTH=[294](m),  CHSLOPE=[0.1088](%), FPSLOPE=[0.1088](%),
                    SECNUM=[1.0],       NSEG=[3]
                    ( SEGROUGH, SEGDIST (m))=[0.05, -20.12
                                             -0.035, 45.26
                                              0.05, 403.84] NSEG times
                    ( DISTANCE (m), ELEVATION (m))=[]
                    [-909.72, 95 ]
                    [-907.09, 94.5 ]
                    [-904.65, 94 ]
                    [-902.26, 93.5 ]
                    [-44.51, 91.5 ]
                    [-25.1, 91.5 ]
                    [-20.98, 91 ]
                    [-20.61, 90.5 ]
                    [-20.12, 90 ]
                    [-6.13, 87.26 ]
                    [17.51, 86.56 ]
                    [31.37, 87.2 ]
                    [45.26, 90 ]
                    [50.41, 90.5 ]
                    [63.06, 91 ]
                    [134.5, 91.5 ]
                    [190.63, 92 ]
                    [251.98, 92.5 ]
                    [321.32, 93.5 ]
                    [403.84, 95 ]
*%-----------------|------------------------------------------------------------|
ADD HYD             NHYDsum=["SN_KB"], NHYDs to
add=["4241-out"+"FC-04-S"+"JR-01-S"+"JR-02-S"]
*%-----------------|------------------------------------------------------------|
SAVE HYD            NHYD=["SN_KB"],   # OF PCYCLES=[-1],  ICASEsh=[1]
                    HYD_COMMENT=["Total Flows before Station 3633"]
*%-----------------|------------------------------------------------------------|
*# Hydrograph from Station 3633 to Node Todd
*# Channel X-Section obtained from RVCA Hydraulic Model - Station 3633
*# JFSA 2021-02-26 change the channel length (at station 3633) from 650m to 608m and
change the slope from 0.0498% to 0.24671%. That is because of adding station 4241
between station 4534 and  station 3633
*#
ROUTE CHANNEL       NHYDout=["N_TO"], NHYDin=["SN_KB"],  RDT=[1](min),
                    CHLGTH=[608](m),  CHSLOPE=[0.24671](%), FPSLOPE=[0.24671](%),
                    SECNUM=[1.0],       NSEG=[3]
                    ( SEGROUGH, SEGDIST (m))=[0.05, -23.74
                                             -0.035, 23.74
                                              0.05, 26.50] NSEG times
                    ( DISTANCE (m), ELEVATION (m))=[]
                    -29.24, 91.0
                    -27.41, 90.5
                    -25.64, 90
                    -23.74, 89.5
                    -22, 89.26
                    -20, 88.51
                    -19, 88.32
                    -15, 88.1
                    -10, 88.11
                    -5, 88.17
                    0, 88.27
                    5, 88.19
                    10, 88.06
                    15, 88.48
```

```
                    16, 88.7
                    23.74, 89.5
                    24.68, 90
                    25.57, 90.5
                    26.50, 91.0
*                                         [-29.24, 91]
*                                         [-27.41, 90.5]
*                                         [-25.64, 90]
*                                         [-23.74, 89.5]
*                                         [-22, 89. 26]
*                                         [-20, 88.51]
*                                         [-19, 88.32]
*                                         [-15, 88.1]
*                                         [-10, 88.11]
*                                         [-5, 88.17]
*                                         [0, 88.27]
*                                         [5, 88.19]
*                                         [10, 88.06]
*                                         [15, 88.48]
*                                         [16, 88.7]
*                                         [23.74, 89.5]
*                                         [24.68, 90]
*                                         [25.57, 90.5]
*%-----------------|------------------------------------------------------------|
*#*****************************************************************************
*#    Catchment Greenbank
*#    - To Greenbank Drain (south of the Jock)
*#    - JFSA 2021-01-18 add Greenbank pond as per JFSA, P598(06)-15, June 2016
*#    - JFSA 2021-01-19 update area from 37.479 ha to 36.6 ha based on GIS measurements
*#*****************************************************************************
CONTINUOUS STANDHYD NHYD=["Greenbank"], DT=[1]min, AREA=[36.6](ha),
                    XIMP=[0.639], TIMP=[0.682], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[77],
                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
                            LGI=[493.96](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[18](hrs),   END=-1
*%-----------------|------------------------------------------------------------|
ROUTE RESERVOIR     NHYDout=["GreenB_MN"] ,NHYDin=["Greenbank"] ,
                    RDT=[1](min),
                          TABLE of ( OUTFLOW-STORAGE ) values
                                      (cms) - (ha-m)
                                    [    0.0 , 0.0    ]
                                    [ 0.033 , 0.084 ]
                                    [ 0.039 , 0.201 ]
                                    [ 0.113 , 0.292 ]
                                    [ 0.237 , 0.386 ]
                                    [ 0.382 , 0.484 ]
                                    [ 0.539 , 0.585 ]
                                    [ 0.7 , 0.692 ]
                                    [ 0.86 , 0.804 ]
                                    [ 4.684 , 0.922 ]
                                    [ 11.539 , 1.052 ]
                                    [ 20.867 , 1.168 ]
                                    [ 103.616 , 1.974 ]
                                    [    -1  ,  -1    ]  (max twenty pts)
                          NHYDovf=["GreenB_MJ"] ,
*%-----------------|------------------------------------------------------------|
*%-----------------|------------------------------------------------------------|
ADD HYD             NHYDsum=["GreenB"], NHYDs to add=["N_TO"+"GreenB_MJ"+"GreenB_MN"]
*%-----------------|------------------------------------------------------------|
SAVE HYD            NHYD=["GreenB"],   # OF PCYCLES=[-1],  ICASEsh=[1]
```

```
                    HYD_COMMENT=["Total Flows at Greenbank Drain"]
*%-----------------|-----------------------------------------------------------|
*#*****************************************************************************
*#    Catchment TODD
*#    - To Todd Drain (south of the Jock)
*#    - Subdivision with 43% imp. as per Barrhaven South MSS
*#    - 2020-11-30 increase imp. based on P598(04)-11
*#    - 2020-11-30 update TODD Tributary Drainage Area to  = 146.015 ha based on P598(04)-11
*#    - 2020-11-30 split TODD Drainage Area to MAJOR, MINOR, POND and ALL
*#*****************************************************************************
*#    - JFSA 2021-01-19 add "TODD_MN1" as part of Clarke("W_CLAR_MJ") and remove it from Todd
*CONTINUOUS STANDHYD NHYD=["TODD_MN1"], DT=[1]min, AREA=[1.772](ha),
*                    XIMP=[0.53], TIMP=[0.57], DWF=[0](cms), LOSS=[2],
*                    SCS curve number CN=[77],
*                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
*                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
*                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
*                            LGI=[108.689](m), MNI=[0.013], SCI=[0](min),
*                    Continuous simulation parameters:
*                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
*                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                    InterEventTime=[18](hrs),   END=-1
*%-----------------|-----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["TODD_MN2"], DT=[1]min, AREA=[2.1](ha),
                    XIMP=[0.53], TIMP=[0.57], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[77],
                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
                            LGI=[118.322](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[18](hrs),   END=-1
*%-----------------|-----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["TODD_MN3"], DT=[1]min, AREA=[0.117](ha),
                    XIMP=[0.53], TIMP=[0.57], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[77],
                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
                            LGI=[27.928](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[18](hrs),   END=-1
*%-----------------|-----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["TODD_MJ"], DT=[1]min, AREA=[30.230](ha),
                    XIMP=[0.52], TIMP=[0.64], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[77],
                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
                            LGI=[448.925](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[18](hrs),   END=-1
*%-----------------|-----------------------------------------------------------|
*     -JFSA, 2021-01-19  update "TODD_ALL" area from 108.741 ha to 112.908 ha based on GIS measurements (148.41-30.23-0.117-2.1-3.055=112.908 ha)
CONTINUOUS STANDHYD NHYD=["TODD_ALL"], DT=[1]min, AREA=[112.908](ha),
                    XIMP=[0.52], TIMP=[0.57], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[77],
```

```
                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
                            LGI=[867.594](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[18](hrs),   END=-1
*%-----------------|-------------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["TODD_P"], DT=[1]min, AREA=[3.055](ha),
                    XIMP=[0.63], TIMP=[0.63], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[77],
                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
                            LGI=[142.712](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[18](hrs),   END=-1
*%-----------------|-------------------------------------------------------------|
*%-----------------|-------------------------------------------------------------|
*    -JFSA 2021-02-23 "TODD_DEVL" is part of the Corrigan sub-catchment because it drains to Corrigan SWM as per geoOttawa.ca Feb. 2021. "TODD_DEVL" now is called "corr1" and its parameters remain the same.
*CONTINUOUS STANDHYD NHYD=["TODD_DEVL"], DT=[1]min, AREA=[15.87](ha),
*                    XIMP=[0.63], TIMP=[0.63], DWF=[0](cms), LOSS=[2],
*                    SCS curve number CN=[77],
*                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
*                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
*                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
*                            LGI=[325.27](m), MNI=[0.013], SCI=[0](min),
*                    Continuous simulation parameters:
*                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
*                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                    InterEventTime=[18](hrs),   END=-1
*%-----------------|-------------------------------------------------------------|
*    -JFSA 2021-02-23 "TODD_UnD" is part of the Corrigan sub-catchment. "TODD_UnD" now is called "corr2" and its parameters remain the same.
*CONTINUOUS NASHYD   NHYD=["TODD_UnD"], DT=[1]min, AREA=[12.47](ha),
*                    DWF=[0](cms), CN/C=[77],  IA=[4.67](mm),
*                    N=[3], TP=[1.10]hrs,
*                    Continuous simulation parameters:
*                    IaRECper=[4](hrs),
*                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                    InterEventTime=[12](hrs)
*                    Baseflow simulation parameters:
*                    BaseFlowOption=[1] ,
*                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
*                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-------------------------------------------------------------|
*# 5-Year + 12% Capture
*COMPUTE DUALHYD     NHYDin=["TODD_MJ"], CINLET=[3.314](cms), NINLET=[1],
*                    MajNHYD=["TODD_MJj"]
*                    MinNHYD=["TODD_MJn"]
*                    TMJSTO=[0.1](cu-m)
ROUTE RESERVOIR     NHYDout=["TODD_MJn"] ,NHYDin=["TODD_MJ"] ,
                    RDT=[1](min),
                          TABLE of ( OUTFLOW-STORAGE ) values
                                      (cms) - (ha-m)
                                    [    0.0 , 0.0    ]
                                    [ 3.314  , 0.0001 ]
                                    [    -1  ,  -1    ]  (max twenty pts)
                          NHYDovf=["TODD_MJj"] ,
*%-----------------|-------------------------------------------------------------|
*# 5-Year + 12% Capture
```

```
*COMPUTE DUALHYD     NHYDin=["TODD_MN1"], CINLET=[0.227](cms), NINLET=[1],
*                    MajNHYD=["TODD_MN1j"]
*                    MinNHYD=["TODD_MN1n"]
*                    TMJSTO=[0.1](cu-m)
*ROUTE RESERVOIR     NHYDout=["TODD_MN1n"] ,NHYDin=["TODD_MN1"] ,
*                    RDT=[1](min),
*                          TABLE of ( OUTFLOW-STORAGE ) values
*                                      (cms) - (ha-m)
*                                    [    0.0 , 0.0    ]
*                                    [ 0.227  , 0.0001 ]
*                                    [    -1  ,  -1    ]  (max twenty pts)
*                          NHYDovf=["TODD_MN1j"] ,
*%-----------------|-----------------------------------------------------------|
*COMPUTE DUALHYD     NHYDin=["TODD_MN2"], CINLET=[0.268](cms), NINLET=[1],
*                    MajNHYD=["TODD_MN2j"]
*                    MinNHYD=["TODD_MN2n"]
*                    TMJSTO=[0.1](cu-m)
ROUTE RESERVOIR     NHYDout=["TODD_MN2n"] ,NHYDin=["TODD_MN2"] ,
                    RDT=[1](min),
                          TABLE of ( OUTFLOW-STORAGE ) values
                                      (cms) - (ha-m)
                                    [    0.0 , 0.0    ]
                                    [ 0.268  , 0.0001 ]
                                    [    -1  ,  -1    ]  (max twenty pts)
                          NHYDovf=["TODD_MN2j"] ,
*%-----------------|-----------------------------------------------------------|
*COMPUTE DUALHYD     NHYDin=["TODD_MN3"], CINLET=[0.016](cms), NINLET=[1],
*                    MajNHYD=["TODD_MN3j"]
*                    MinNHYD=["TODD_MN3n"]
*                    TMJSTO=[0.1](cu-m)
ROUTE RESERVOIR     NHYDout=["TODD_MN3n"] ,NHYDin=["TODD_MN3"] ,
                    RDT=[1](min),
                          TABLE of ( OUTFLOW-STORAGE ) values
                                      (cms) - (ha-m)
                                    [    0.0 , 0.0    ]
                                    [ 0.016  , 0.0001 ]
                                    [    -1  ,  -1    ]  (max twenty pts)
                          NHYDovf=["TODD_MN3j"] ,
*%-----------------|-----------------------------------------------------------|
*    -JFSA 2021-01-19 move A2 from Corrigan sub-catchment to Todd sub-catchment so the major system from A2 can be added to Todd
CONTINUOUS STANDHYD NHYD=["A2"], DT=[1]min, AREA=[25.5](ha),
                    XIMP=[0.42], TIMP=[0.52], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[75],
                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
                            LGI=[566](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[18](hrs),   END=-1
*%-----------------|-----------------------------------------------------------|
COMPUTE DUALHYD     NHYDin=["A2"], CINLET=[1.818](cms), NINLET=[1],
                    MajNHYD=["A2-MJ"]
                    MinNHYD=["A2-MN"]
                    TMJSTO=[924](cu-m)
*%-----------------|-----------------------------------------------------------|
ADD HYD             NHYDsum=["TODD"], NHYDs to add=["TODD_MN2n"+"TODD_MN3n"+"TODD_MJj"+"TODD_P"+"TODD_ALL"+"W_CLAR_MJn"]
*%-----------------|-----------------------------------------------------------|
SAVE HYD            NHYD=["TODD"],   # OF PCYCLES=[-1],  ICASEsh=[1]
                    HYD_COMMENT=["Total Flows at Todd Drain"]
*%-----------------|-----------------------------------------------------------|
*#*****************************************************************************
*#    Todd Pond 3
```

```
*#    - Rating curve obtained from Barrhaven South MSS modeling
*#    - stantec 2007, Tributary Drainage Area to MSS Pond 3 = 193 ha
*#*******************************************************************************
ROUTE RESERVOIR     NHYDout=["MS_P3"],  NHYDin=["TODD"],
                    RDT=[1](min),
                          TABLE of ( OUTFLOW-STORAGE ) values
                                      (cms) - (ha-m)
                                    [   0.0 ,  0.0 ]
                                    [ 0.014 , 0.155 ]
                                    [ 0.048 , 0.394 ]
                                    [ 0.061 , 0.56 ]
                                    [ 0.08 , 0.909 ]
                                    [ 0.088 , 1.089 ]
                                    [ 0.109 , 1.652 ]
                                    [ 0.118 , 1.952 ]
                                    [ 0.122 , 2.099 ]
                                    [ 1.972 , 2.269 ]
                                    [ 9.135 , 2.598 ]
                                    [ 15.608 , 2.826 ]
                                    [ 19.256 , 2.942 ]
                                    [ 27.282 , 3.181 ]
                                    [ 40.957 , 3.55 ]
                                    [ 56.372 , 3.929 ]
                                    [ 73.349 , 4.317 ]
                                    [ 85.469 , 4.579 ]
                                    [ 104.771 , 4.977 ]
                                    [   -1  ,  -1  ]  (max twenty pts)
                          NHYDovf=["P3-OVF"]
*%-----------------|------------------------------------------------------------|
ADD HYD             NHYDsum=["SN_TO"], NHYDs to add=["GreenB"+"MS_P3"+"P3-OVF"+"TODD_MN2j"+"A2-MJ"]
*%-----------------|------------------------------------------------------------|
SAVE HYD            NHYD=["SN_TO"],   # OF PCYCLES=[-1],  ICASEsh=[1]
                    HYD_COMMENT=["Total Flows at Todd Drain"]
*%-----------------|------------------------------------------------------------|
*#
*# Hydrograph from Todd Drain routed to Corrigan Drain
*# Channel X-Section obtained from RVCA Hydraulic Model - Station 2462
*# 2021-02-19 Change the slope from 0.033 % (as per Stantec Report 2007) to 0.05 % so the model will be more stable and give reasonable results. It is justifiable as ROUTE CHANNELs aren't well suited to really flat slopes.
*
ROUTE CHANNEL       NHYDout=["N_TO"] ,NHYDin=["SN_TO"] ,
                    RDT=[1](min),
                    CHLGTH=[280](m),  CHSLOPE=[0.05](%),
                                      FPSLOPE=[0.05](%),
                    SECNUM=[1.0],       NSEG=[3]
                    ( SEGROUGH, SEGDIST (m))=
                      [0.075,-17.72
                      -0.045,17.72
                      0.075,80.62] NSEG times
                    ( DISTANCE (m), ELEVATION (m))=
                    [-83.32, 90.00]
                    [-81.36, 89.50]
                    [-79.12, 89.00]
                    [-76.13, 88.50]
                    [-20.46, 88.00]
                    [-19.36, 87.50]
                    [-18.51, 87.00]
                    [-17.72, 86.50]
                    [-11.95, 85.24]
                    [-0.11, 85.12]
                    [11.49, 85.20]
                    [17.72, 86.50]
                    [19.74, 87.00]
                    [21.22, 87.50]
```

```
                    [22.68, 88.00]
                    [24.28, 88.50]
                    [26.79, 89.00]
                    [71.98, 90.00]
                    [80.62, 90.50]
*%-----------------|-----------------------------------------------------------|
SAVE HYD            NHYD=["N_TO"],   # OF PCYCLES=[-1],  ICASEsh=[1]
                    HYD_COMMENT=["Total inflows at Station 2462"]
*%-----------------|-----------------------------------------------------------|
*#******************************************************************************
*#    Catchment CORRIG
*#    - To Corrigan Drain (south of the Jock)
*#    - Primarily Developed (medium density)
*#    - JFSA JAN 2021, add Corrigan subcatchments as per IBI, July 2008
*#******************************************************************************
*ROUTE RESERVOIR     NHYDout=["MS_P1"],  NHYDin=["CORRIG"],
*                    RDT=[1](min),
*                          TABLE of ( OUTFLOW-STORAGE ) values
*                                      (cms) - (ha-m)
*                                    [   0.0 ,  0.0 ]
*                                    [   0.06 , 0.58]
*                                    [   -1  ,  -1  ]  (max twenty pts)
*                          NHYDovf=["P1-OVF"]
*%-----------------|-----------------------------------------------------------|
*ADD HYD             NHYDsum=["SN_CO"], NHYDs to add=["N_TO"+"P1-OVF"+"MS_P1"]
*%-----------------|-----------------------------------------------------------|
*SAVE HYD            NHYD=["SN_CO"],   # OF PCYCLES=[-1],  ICASEsh=[1]
*                    HYD_COMMENT=["Total Flows at Corrigan Drain"]
*%-----------------|-----------------------------------------------------------|
*    -JFSA 2021-02-23 "TODD_DEVL" is part of the Corrigan sub-catchment because it drains to Corrigan SWM as per geoOttawa.ca Feb. 2021. "TODD_DEVL" now is called "corr1" and its parameters remain the same.
CONTINUOUS STANDHYD NHYD=["corr1"], DT=[1]min, AREA=[15.87](ha),
                    XIMP=[0.63], TIMP=[0.63], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[77],
                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
                            LGI=[325.27](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[18](hrs),   END=-1
*%-----------------|-----------------------------------------------------------|
*      -JFSA 2021-02-23 add DUALHYD for "corr1". "corr1" DUALHYD Parameters are the same as A2 DUALHYD Parameters because A2 is the nearest sub-catchment to "corr1".
*       At the same time, Corrigan Report, IBI group 2008 has no DUALHYD Parameters for A1-Corrig
COMPUTE DUALHYD     NHYDin=["corr1"], CINLET=[1.818](cms), NINLET=[1],
                    MajNHYD=["corr1-MJ"]
                    MinNHYD=["corr1-MN"]
                    TMJSTO=[924](cu-m)
*%-----------------|-----------------------------------------------------------|
*    -JFSA 2021-02-23 "TODD_UnD" is part of the Corrigan sub-catchment. "TODD_UnD" now is called "corr2" and its parameters remain the same.
CONTINUOUS NASHYD   NHYD=["corr2"], DT=[1]min, AREA=[12.47](ha),
                    DWF=[0](cms), CN/C=[77],  IA=[4.67](mm),
                    N=[3], TP=[1.10]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
```

```
*%-----------------|-------------------------------------------------------------|
*     -JFSA 2021-01-19 change A1-Corrig to be developed as per geoottawa website and apply the parameters of A2, the nearest sub-catchment to A1-Corrig, LGI is calculated based on A1-Corrig area
*     -JFSA 2021-01-19 update all Corrigan areas based on GIS measurements, and keep LGI as it is from Corrigan Report, IBI Group, 2008 because LGI calculated is less than LGI from the Corrigan Report
CONTINUOUS STANDHYD NHYD=["A1-Corrig"], DT=[1]min, AREA=[15.75](ha),
                    XIMP=[0.42], TIMP=[0.52], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[75],
                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
                            LGI=[324.037](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[18](hrs),   END=-1
*
*      -JFSA 2021-01-25 add DUALHYD for A1-Corrig. A1-Corrig DUALHYD Parameters are the same as A2 DUALHYD Parameters because A2 is the nearest sub-catchment to A1-Corrig.
*       At the same time, Corrigan Report, IBI group 2008 has no DUALHYD Parameters for A1-Corrig
COMPUTE DUALHYD     NHYDin=["A1-Corrig"], CINLET=[1.818](cms), NINLET=[1],
                    MajNHYD=["A1-MJ"]
                    MinNHYD=["A1-MN"]
                    TMJSTO=[924](cu-m)
*%-----------------|-------------------------------------------------------------|
*CONTINUOUS NASHYD   NHYD=["A1-Corrig"], DT=[1]min, AREA=[15.75](ha),
*                    DWF=[0](cms),  CN/C=[66], IA=[2.5](mm),
*                    N=[3.0], TP=[0.36]hrs,
*                    Continuous simulation parameters:
*                    IaRECper=[4](hrs),
*                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                    InterEventTime=[12](hrs)
*                    Baseflow simulation parameters:
*                    BaseFlowOption=[1] ,
*                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
*                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-------------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["B1"], DT=[1]min, AREA=[2.77](ha),
                    DWF=[0](cms),  CN/C=[56], IA=[2.5](mm),
                    N=[3.0], TP=[0.23]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-------------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["A4"], DT=[1]min, AREA=[1.27](ha),
                    XIMP=[0.65], TIMP=[0.65], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[75],
                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
                            LGI=[253](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[18](hrs),   END=-1
*%-----------------|-------------------------------------------------------------|
COMPUTE DUALHYD     NHYDin=["A4"], CINLET=[0.405](cms), NINLET=[1],
                    MajNHYD=["A4-MJ"]
```

```
                    MinNHYD=["A4-MN"]
                    TMJSTO=[68](cu-m)
*%-----------------|-------------------------------------------------------------|
ADD HYD             NHYDsum=["MH101"], NHYDs to
add=["A1-MJ"+"A1-MN"+"corr1-MJ"+"corr1-MN"+"corr2"+"B1"+"A4-MN"]
*%-----------------|-------------------------------------------------------------|
SAVE HYD            NHYD=["MH101"],   # OF PCYCLES=[-1],  ICASEsh=[1]
                    HYD_COMMENT=["Total Flows at MH101"]
*%-----------------|-------------------------------------------------------------|
ROUTE PIPE          PTYPE=[1]circ, NHYDout=["101-102"], RNUMBER=[1.0], PDIAM=[1050](mm),
                    PLNGTH=[368](m), PROUGH=[0.013], PSLOPE=[0.0054](m/m),
                    NHYDin=["MH101"], RDT=[1]
*%-----------------|-------------------------------------------------------------|
*    -JFSA 2021-01-19 move A2 from Corrigan sub-catchment to Todd sub-catchment so the
major system from A2 can be added to Todd
*CONTINUOUS STANDHYD NHYD=["A2"], DT=[1]min, AREA=[25.5](ha),
*                    XIMP=[0.42], TIMP=[0.52], DWF=[0](cms), LOSS=[2],
*                    SCS curve number CN=[75],
*                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
*                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
*                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
*                            LGI=[566](m), MNI=[0.013], SCI=[0](min),
*                    Continuous simulation parameters:
*                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
*                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                    InterEventTime=[18](hrs),   END=-1
*%-----------------|-------------------------------------------------------------|
*COMPUTE DUALHYD     NHYDin=["A2"], CINLET=[1.818](cms), NINLET=[1],
*                    MajNHYD=["A2-MJ"]
*                    MinNHYD=["A2-MN"]
*                    TMJSTO=[924](cu-m)
*%-----------------|-------------------------------------------------------------|
ADD HYD             NHYDsum=["MH102"], NHYDs to add=["A2-MN"+"101-102"]
*%-----------------|-------------------------------------------------------------|
SAVE HYD            NHYD=["MH102"],   # OF PCYCLES=[-1],  ICASEsh=[1]
                    HYD_COMMENT=["Total Flows at MH102"]
*%-----------------|-------------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["A5"], DT=[1]min, AREA=[1.6](ha),
                    XIMP=[0.71], TIMP=[0.71], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[75],
                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
                            LGI=[300](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[18](hrs),   END=-1
*%-----------------|-------------------------------------------------------------|
ADD HYD             NHYDsum=["A5T"], NHYDs to add=["A4-MJ"+"A5"]
*%-----------------|-------------------------------------------------------------|
COMPUTE DUALHYD     NHYDin=["A5T"], CINLET=[0.357](cms), NINLET=[1],
                    MajNHYD=["A5-MJ"]
                    MinNHYD=["A5-MN"]
                    TMJSTO=[60](cu-m)
*%-----------------|-------------------------------------------------------------|
*   -JFSA Jan. 2021, A3 is a part of Todd so it is removed
*   -JFSA Jan. 2021, "A2-MJ" added to "Todd"
*CONTINUOUS STANDHYD NHYD=["A3"], DT=[1]min, AREA=[18.4](ha),
*                    XIMP=[0.58], TIMP=[0.65], DWF=[0](cms), LOSS=[2],
*                    SCS curve number CN=[75],
*                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
*                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
*                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
*                            LGI=[450](m), MNI=[0.013], SCI=[0](min),
*                    Continuous simulation parameters:
```

```
*                     IaRECper=[4](hrs),  IaRECimp=[4](hrs),
*                     SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                     InterEventTime=[18](hrs),   END=-1
*%-----------------|-------------------------------------------------------------|
*ADD HYD              NHYDsum=["A3-A2MJ"], NHYDs to add=["A2-MJ"+"A3"]
*%-----------------|-------------------------------------------------------------|
*COMPUTE DUALHYD      NHYDin=["A3-A2MJ"], CINLET=[2.208](cms), NINLET=[1],
*                     MajNHYD=["A3R-MJ"]
*                     MinNHYD=["A3R-MN"]
*                     TMJSTO=[908](cu-m)
*%-----------------|-------------------------------------------------------------|
ROUTE PIPE           PTYPE=[1]circ, NHYDout=["102-103"], RNUMBER=[1.0], PDIAM=[1500](mm),
                     PLNGTH=[504](m), PROUGH=[0.013], PSLOPE=[0.0028](m/m),
                     NHYDin=["MH102"], RDT=[1]
*%-----------------|-------------------------------------------------------------|
ADD HYD              NHYDsum=["MH103"], NHYDs to add=["102-103"+"A5-MN"]
*%-----------------|-------------------------------------------------------------|
SAVE HYD             NHYD=["MH103"],   # OF PCYCLES=[-1],  ICASEsh=[1]
                     HYD_COMMENT=["Total Flows at MH103"]
*%-----------------|-------------------------------------------------------------|
ROUTE PIPE           PTYPE=[1]circ, NHYDout=["103-104"], RNUMBER=[1.0], PDIAM=[1650](mm),
                     PLNGTH=[438](m), PROUGH=[0.013], PSLOPE=[0.0046](m/m),
                     NHYDin=["MH103"], RDT=[1]
*%-----------------|-------------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["A6"], DT=[1]min, AREA=[1.56](ha),
                     XIMP=[0.71], TIMP=[0.71], DWF=[0](cms), LOSS=[2],
                     SCS curve number CN=[75],
                     Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                             LGP=[40](m), MNP=[0.25], SCP=[0](min),
                     Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
                             LGI=[280](m), MNI=[0.013], SCI=[0](min),
                     Continuous simulation parameters:
                     IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                     SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                     InterEventTime=[18](hrs),   END=-1
*%-----------------|-------------------------------------------------------------|
ADD HYD              NHYDsum=["A6T"], NHYDs to add=["A5-MJ"+"A6"]
*%-----------------|-------------------------------------------------------------|
COMPUTE DUALHYD      NHYDin=["A6T"], CINLET=[0.357](cms), NINLET=[1],
                     MajNHYD=["A6-MJ"]
                     MinNHYD=["A6-MN"]
                     TMJSTO=[60](cu-m)
*%-----------------|-------------------------------------------------------------|
*   -JFSA Jan. 2021, A7-corrig is a part of Todd so it is removed
*CONTINUOUS STANDHYD NHYD=["A7-corrig"], DT=[1]min, AREA=[11.8](ha),
*                     XIMP=[0.41], TIMP=[0.54], DWF=[0](cms), LOSS=[2],
*                     SCS curve number CN=[75],
*                     Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
*                             LGP=[40](m), MNP=[0.25], SCP=[0](min),
*                     Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
*                             LGI=[438](m), MNI=[0.013], SCI=[0](min),
*                     Continuous simulation parameters:
*                     IaRECper=[4](hrs),  IaRECimp=[4](hrs),
*                     SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                     InterEventTime=[18](hrs),   END=-1
*%-----------------|-------------------------------------------------------------|
*ADD HYD              NHYDsum=["A7-A3RMJ"], NHYDs to add=["A3R-MJ"+"A7-corrig"]
*%-----------------|-------------------------------------------------------------|
*COMPUTE DUALHYD      NHYDin=["A7-A3RMJ"], CINLET=[1.003](cms), NINLET=[1],
*                     MajNHYD=["A7R-MJ"]
*                     MinNHYD=["A7R-MN"]
*                     TMJSTO=[496](cu-m)
*%-----------------|-------------------------------------------------------------|
ADD HYD              NHYDsum=["MH104"], NHYDs to add=["A6-MN"+"103-104"+"TODD_MJn"]
*%-----------------|-------------------------------------------------------------|
SAVE HYD             NHYD=["MH104"],   # OF PCYCLES=[-1],  ICASEsh=[1]
```

```
                         HYD_COMMENT=["Total Flows at MH104"]
*%-----------------|------------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["B2"], DT=[1]min, AREA=[12.31](ha),
                    XIMP=[0.41], TIMP=[0.54], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[75],
                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
                            LGI=[417](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[18](hrs),   END=-1
*%-----------------|------------------------------------------------------------|
COMPUTE DUALHYD     NHYDin=["B2"], CINLET=[1.029](cms), NINLET=[1],
                    MajNHYD=["B2-MJ"]
                    MinNHYD=["B2-MN"]
                    TMJSTO=[508](cu-m)
*%-----------------|------------------------------------------------------------|
ROUTE PIPE          PTYPE=[1]circ, NHYDout=["315-333"], RNUMBER=[1.0], PDIAM=[1200](mm),
                    PLNGTH=[254](m), PROUGH=[0.013], PSLOPE=[0.001](m/m),
                    NHYDin=["B2-MN"], RDT=[1]
*%-----------------|------------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["B3"], DT=[1]min, AREA=[5.59](ha),
                    XIMP=[0.41], TIMP=[0.54], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[75],
                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
                            LGI=[345](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[18](hrs),   END=-1
*%-----------------|------------------------------------------------------------|
COMPUTE DUALHYD     NHYDin=["B3"], CINLET=[0.459](cms), NINLET=[1],
                    MajNHYD=["B3-MJ"]
                    MinNHYD=["B3-MN"]
                    TMJSTO=[227](cu-m)
*%-----------------|------------------------------------------------------------|
ADD HYD             NHYDsum=["MH333"], NHYDs to add=["B3-MN"+"315-333"]
*%-----------------|------------------------------------------------------------|
SAVE HYD            NHYD=["MH333"],   # OF PCYCLES=[-1],  ICASEsh=[1]
                    HYD_COMMENT=["Total Flows at MH333"]
*%-----------------|------------------------------------------------------------|
ROUTE PIPE          PTYPE=[1]circ, NHYDout=["333-335"], RNUMBER=[1.0], PDIAM=[1200](mm),
                    PLNGTH=[251](m), PROUGH=[0.013], PSLOPE=[0.001](m/m),
                    NHYDin=["MH333"], RDT=[1]
*%-----------------|------------------------------------------------------------|
ROUTE PIPE          PTYPE=[1]circ, NHYDout=["335-338"], RNUMBER=[1.0], PDIAM=[1200](mm),
                    PLNGTH=[185](m), PROUGH=[0.013], PSLOPE=[0.001](m/m),
                    NHYDin=["333-335"], RDT=[1]
*%-----------------|------------------------------------------------------------|
ROUTE PIPE          PTYPE=[1]circ, NHYDout=["338-340"], RNUMBER=[1.0], PDIAM=[1350](mm),
                    PLNGTH=[233](m), PROUGH=[0.013], PSLOPE=[0.001](m/m),
                    NHYDin=["335-338"], RDT=[1]
*%-----------------|------------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["B4"], DT=[1]min, AREA=[7.6](ha),
                    XIMP=[0.41], TIMP=[0.54], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[75],
                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
                            LGI=[388](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
```

```
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[18](hrs),   END=-1
*%-----------------|-----------------------------------------------------------|
COMPUTE DUALHYD     NHYDin=["B4"], CINLET=[0.655](cms), NINLET=[1],
                    MajNHYD=["B4-MJ"]
                    MinNHYD=["B4-MN"]
                    TMJSTO=[323](cu-m)
*%-----------------|-----------------------------------------------------------|
ADD HYD             NHYDsum=["MH340"], NHYDs to add=["338-340"+"B4-MN"]
*%-----------------|-----------------------------------------------------------|
SAVE HYD            NHYD=["MH340"],   # OF PCYCLES=[-1],  ICASEsh=[1]
                    HYD_COMMENT=["Total Flows at MH340"]
*%-----------------|-----------------------------------------------------------|
ROUTE PIPE          PTYPE=[1]circ, NHYDout=["340-104"], RNUMBER=[1.0], PDIAM=[1650](mm),
                    PLNGTH=[240](m), PROUGH=[0.013], PSLOPE=[0.0015](m/m),
                    NHYDin=["MH340"], RDT=[1]
*%-----------------|-----------------------------------------------------------|
ADD HYD             NHYDsum=["MH104T"], NHYDs to add=["340-104"+"MH104"]
*%-----------------|-----------------------------------------------------------|
ROUTE PIPE          PTYPE=[2]rect, NHYDout=["104-105"], RNUMBER=[1.0],
PWIDTH=[2400](mm)  by PHEIGHT=[2100](mm),
                    PLNGTH=[380](m), PROUGH=[0.013], PSLOPE=[0.001](m/m),
                    NHYDin=["MH104T"], RDT=[1]
*%-----------------|-------------------------------------------------------------------
-----------------------------|
CONTINUOUS STANDHYD NHYD=["B5"], DT=[1]min, AREA=[2.2](ha),
                    XIMP=[0.57], TIMP=[0.57], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[75],
                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
                            LGI=[187](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[18](hrs),   END=-1
*%-----------------|-----------------------------------------------------------|
COMPUTE DUALHYD     NHYDin=["B5"], CINLET=[0.260](cms), NINLET=[1],
                    MajNHYD=["B5-MJ"]
                    MinNHYD=["B5-MN"]
                    TMJSTO=[250](cu-m)
*%-----------------|-----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["A8"], DT=[1]min, AREA=[0.96](ha),
                    XIMP=[0.71], TIMP=[0.71], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[75],
                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
                            LGI=[186](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[18](hrs),   END=-1
*%-----------------|-----------------------------------------------------------|
ADD HYD             NHYDsum=["A8T"], NHYDs to add=["A6-MJ"+"A8"]
*%-----------------|-----------------------------------------------------------|
COMPUTE DUALHYD     NHYDin=["A8T"], CINLET=[0.238](cms), NINLET=[1],
                    MajNHYD=["A8-MJ"]
                    MinNHYD=["A8-MN"]
                    TMJSTO=[40](cu-m)
*%-----------------|-----------------------------------------------------------|
ADD HYD             NHYDsum=["MH105"], NHYDs to
add=["104-105"+"B5-MN"+"A8-MN"+"TODD_MN3j"]
*%-----------------|-----------------------------------------------------------|
SAVE HYD            NHYD=["MH105"],   # OF PCYCLES=[-1],  ICASEsh=[1]
                    HYD_COMMENT=["Total Flows at MH105"]
```

```
*%-----------------|-------------------------------------------------------------|
DIVERT HYD           NHYDin=["A8-MJ"] NIDout=[2]max five,
                     outflow hydrographs (NHYDs)=["A8-MJ-JR" "A8-MJ-B6"]
                     flow distribution table: (modify as necessary)
                     Note: all flows are in (cms)
                       QIDi +  QIDii  =  QTOTAL
                     [   0  +    0    =    0   ]                     ]
                     [   50 +   50    =    100  ] end
*%-----------------|-----------------------------------------------------------------------------
-----------------------------|
DIVERT HYD           NHYDin=["MH105"] NIDout=[2]max five,
                     outflow hydrographs (NHYDs)=["MH105-JR"  "MH105-B6"]
                     flow distribution table: (modify as necessary)
                     Note: all flows are in (cms)
                       QIDi +  QIDii  =  QTOTAL
                     [   0  +    0    =    0   ]
                     [   0  +   3.0  =   3.0  ]
                     [  96.9+  3.1    =   100  ] end
*%-----------------|-----------------------------------------------------------------------------
-----------------------------|
CONTINUOUS STANDHYD NHYD=["B7"], DT=[1]min, AREA=[7.19](ha),
                     XIMP=[0.41], TIMP=[0.54], DWF=[0](cms), LOSS=[2],
                     SCS curve number CN=[75],
                     Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                             LGP=[40](m), MNP=[0.25], SCP=[0](min),
                     Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
                             LGI=[211](m), MNI=[0.013], SCI=[0](min),
                     Continuous simulation parameters:
                     IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                     SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                     InterEventTime=[18](hrs),   END=-1
*%-----------------|-------------------------------------------------------------|
ADD HYD              NHYDsum=["B7-B4MJ"], NHYDs to add=["B4-MJ"+"B7"]
*%-----------------|-------------------------------------------------------------|
COMPUTE DUALHYD      NHYDin=["B7-B4MJ"], CINLET=[0.629](cms), NINLET=[1],
                     MajNHYD=["B7R-MJ"]
                     MinNHYD=["B7R-MN"]
                     TMJSTO=[311](cu-m)
*%-----------------|-------------------------------------------------------------|
ROUTE PIPE           PTYPE=[1]circ, NHYDout=["360-106A"], RNUMBER=[1.0], PDIAM=[1050](mm),
                     PLNGTH=[167](m), PROUGH=[0.013], PSLOPE=[0.001](m/m),
                     NHYDin=["B7R-MN"], RDT=[1]
*%-----------------|-------------------------------------------------------------|
*     -JFSA 2021-01-19 change B6 to be developed as per geoottawa website and apply the
parameters of A7, the nearest sub-catchment to B6, LGI is calculated based on B6 area
CONTINUOUS STANDHYD NHYD=["B6"], DT=[1]min, AREA=[3.29](ha),
                     XIMP=[0.41], TIMP=[0.54], DWF=[0](cms), LOSS=[2],
                     SCS curve number CN=[75],
                     Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                             LGP=[40](m), MNP=[0.25], SCP=[0](min),
                     Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
                             LGI=[148.099](m), MNI=[0.013], SCI=[0](min),
                     Continuous simulation parameters:
                     IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                     SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                     InterEventTime=[18](hrs),   END=-1
*%-----------------|-------------------------------------------------------------|
*     -JFSA 2021-01-25   add B1 DUALHYD as per Corrigan Report, IBI Group, 2008
COMPUTE DUALHYD      NHYDin=["B6"], CINLET=[0.064](cms), NINLET=[1],
                     MajNHYD=["B6-MJ"]
                     MinNHYD=["B6-MN"]
                     TMJSTO=[5484](cu-m)
*%-----------------|-------------------------------------------------------------|
*CONTINUOUS NASHYD    NHYD=["B6"], DT=[1]min, AREA=[3.29](ha),
*                     DWF=[0](cms),  CN/C=[75], IA=[2.5](mm),
*                     N=[3.0], TP=[0.36]hrs,
```

```
*                         Continuous simulation parameters:
*                         IaRECper=[4](hrs),
*                         SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
*                         InterEventTime=[12](hrs)
*                         Baseflow simulation parameters:
*                         BaseFlowOption=[1] ,
*                         InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
*                         VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|------------------------------------------------------------|
*%    -EX-LAND is external land. It is a part of JOCKVA sub-catchment as per Corrigan Report, IBI Group, 2008
CONTINUOUS STANDHYD NHYD=["EX-LAND"], DT=[1]min, AREA=[32.5](ha),
                    XIMP=[0.50], TIMP=[0.50], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[74],
                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
                            LGI=[465.475](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[18](hrs),   END=-1
*%-----------------|------------------------------------------------------------|
COMPUTE DUALHYD     NHYDin=["EX-LAND"], CINLET=[2.275](cms), NINLET=[1],
                    MajNHYD=["EX-LAND-MJ"]
                    MinNHYD=["EX-LAND-MN"]
                    TMJSTO=[1365](cu-m)
*%-----------------|------------------------------------------------------------|
ADD HYD             NHYDsum=["B6-B7ExMJ"], NHYDs to add=["B7R-MJ"+"EX-LAND-MJ"+"B5-MJ"+"B6-MJ"+"B6-MN"+"A8-MJ-B6"]
*%-----------------|------------------------------------------------------------|
COMPUTE DUALHYD     NHYDin=["B6-B7ExMJ"], CINLET=[0.064](cms), NINLET=[1],
                    MajNHYD=["B6R-MJ"]
                    MinNHYD=["B6R-MN"]
                    TMJSTO=[5484](cu-m)
*%-----------------|------------------------------------------------------------|
ROUTE PIPE          PTYPE=[1]circ, NHYDout=["105-106A"], RNUMBER=[1.0], PDIAM=[1800](mm),
                    PLNGTH=[208](m), PROUGH=[0.013], PSLOPE=[0.001](m/m),
                    NHYDin=["MH105-B6"], RDT=[1]
*%-----------------|------------------------------------------------------------|
ADD HYD             NHYDsum=["MH106A"], NHYDs to add=["360-106A"+"105-106A"+"B6R-MN"+"B6R-MJ"]
*%-----------------|------------------------------------------------------------|
SAVE HYD            NHYD=["MH106A"],   # OF PCYCLES=[-1],  ICASEsh=[1]
                    HYD_COMMENT=["Total Flows at MH106A"]
*%-----------------|------------------------------------------------------------|
*%    -JFSA 2021-01-12 THE MANHOLE MH106 is called MH117/106 in Corrigan Report, IBI Group, July 2008
*%
ROUTE PIPE          PTYPE=[1]circ, NHYDout=["106A-106"], RNUMBER=[1.0], PDIAM=[1800](mm),
                    PLNGTH=[190](m), PROUGH=[0.013], PSLOPE=[0.001](m/m),
                    NHYDin=["MH106A"], RDT=[1]
*%-----------------|------------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["A9"], DT=[1]min, AREA=[2.44](ha),
                    XIMP=[0.71], TIMP=[0.71], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[75],
                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
                            LGI=[262](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[18](hrs),   END=-1
*%-----------------|------------------------------------------------------------|
COMPUTE DUALHYD     NHYDin=["A9"], CINLET=[0.547](cms), NINLET=[1],
```

```
                    MajNHYD=["A9-MJ"]
                    MinNHYD=["A9-MN"]
                    TMJSTO=[0](cu-m)
*%-----------------|-----------------------------------------------------------|
ADD HYD             NHYDsum=["MH106"], NHYDs to add=["106A-106"+"A9-MN"]
*%-----------------|-----------------------------------------------------------|
SAVE HYD            NHYD=["MH106"],   # OF PCYCLES=[-1],  ICASEsh=[1]
                    HYD_COMMENT=["Total Flows at MH106"]
*%-----------------|-----------------------------------------------------------|
*%    -JFSA 2021-01-12 THE MANHOLE MH107 is called MH118/107 in Corrigan Report, IBI Group, July 2008
*%
ROUTE PIPE          PTYPE=[1]circ, NHYDout=["106-107"], RNUMBER=[1.0], PDIAM=[1800](mm),
                    PLNGTH=[122.5](m), PROUGH=[0.013], PSLOPE=[0.001](m/m),
                    NHYDin=["MH106"], RDT=[1]
*%-----------------|-----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["A10"], DT=[1]min, AREA=[4.14](ha),
                    XIMP=[0.35], TIMP=[0.47], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[75],
                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
                            LGI=[183](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[18](hrs),   END=-1
*%-----------------|-----------------------------------------------------------|
COMPUTE DUALHYD     NHYDin=["A10"], CINLET=[0.310](cms), NINLET=[1],
                    MajNHYD=["A10-MJ"]
                    MinNHYD=["A10-MN"]
                    TMJSTO=[228](cu-m)
*%-----------------|-----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["A11"], DT=[1]min, AREA=[10.61](ha),
                    XIMP=[0.53], TIMP=[0.62], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[75],
                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
                            LGI=[379](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[18](hrs),   END=-1
*%-----------------|-----------------------------------------------------------|
COMPUTE DUALHYD     NHYDin=["A11"], CINLET=[0.993](cms), NINLET=[1],
                    MajNHYD=["A11-MJ"]
                    MinNHYD=["A11-MN"]
                    TMJSTO=[556](cu-m)
*%-----------------|-----------------------------------------------------------|
ADD HYD             NHYDsum=["MH107"], NHYDs to add=["106-107"+"A10-MN"+"A11-MN"]
*%-----------------|-----------------------------------------------------------|
SAVE HYD            NHYD=["MH107"],   # OF PCYCLES=[-1],  ICASEsh=[1]
                    HYD_COMMENT=["Total Flows at MH107"]
*%-----------------|-----------------------------------------------------------|
ROUTE PIPE          PTYPE=[1]circ, NHYDout=["107-119"], RNUMBER=[1.0], PDIAM=[1800](mm),
                    PLNGTH=[114](m), PROUGH=[0.013], PSLOPE=[0.0012](m/m),
                    NHYDin=["MH107"], RDT=[1]
*%-----------------|-----------------------------------------------------------|
*%    -JFSA 2021-01-12 THE MANHOLE MH108 is called MH120/108 in Corrigan Report, IBI Group, July 2008
*%
ROUTE PIPE          PTYPE=[1]circ, NHYDout=["119-108"], RNUMBER=[1.0], PDIAM=[1800](mm),
                    PLNGTH=[65.8](m), PROUGH=[0.013], PSLOPE=[0.0012](m/m),
                    NHYDin=["107-119"], RDT=[1]
*%-----------------|-----------------------------------------------------------|
```

```
CONTINUOUS STANDHYD NHYD=["A12"], DT=[1]min, AREA=[12.29](ha),
                    XIMP=[0.41], TIMP=[0.54], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[75],
                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
                            LGI=[183](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[18](hrs),   END=-1
*%-----------------|-----------------------------------------------------------|
COMPUTE DUALHYD     NHYDin=["A12"], CINLET=[1.029](cms), NINLET=[1],
                    MajNHYD=["A12-MJ"]
                    MinNHYD=["A12-MN"]
                    TMJSTO=[672](cu-m)
*%-----------------|-----------------------------------------------------------|
CONTINUOUS STANDHYD NHYD=["A13"], DT=[1]min, AREA=[2.59](ha),
                    XIMP=[0.71], TIMP=[0.71], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[75],
                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
                            LGI=[379](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[18](hrs),   END=-1
*%-----------------|-----------------------------------------------------------|
COMPUTE DUALHYD     NHYDin=["A13"], CINLET=[0.571](cms), NINLET=[1],
                    MajNHYD=["A13-MJ"]
                    MinNHYD=["A13-MN"]
                    TMJSTO=[0](cu-m)
*%-----------------|-----------------------------------------------------------|
*   -JFSA 2021-01-22 add the Corrigan pond area ("Pond-Block")
CONTINUOUS STANDHYD NHYD=["Pond-Block"], DT=[1]min, AREA=[2.94](ha),
                    XIMP=[0.415], TIMP=[0.415], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[75],
                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
                            LGI=[183](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[18](hrs),   END=-1
*%-----------------|-----------------------------------------------------------|
ADD HYD             NHYDsum=["MH108"], NHYDs to add=["119-108"+"A13-MN"+"A12-MN"]
*%-----------------|-----------------------------------------------------------|
SAVE HYD            NHYD=["MH108"],   # OF PCYCLES=[-1],  ICASEsh=[1]
                    HYD_COMMENT=["Total Flows at MH108"]
*%-----------------|-----------------------------------------------------------|
ROUTE PIPE          PTYPE=[1]circ, NHYDout=["108-116"], RNUMBER=[1.0], PDIAM=[1800](mm),
                    PLNGTH=[76.6](m), PROUGH=[0.013], PSLOPE=[0.0013](m/m),
                    NHYDin=["MH108"], RDT=[1]
*%-----------------|-----------------------------------------------------------|
ROUTE PIPE          PTYPE=[1]circ, NHYDout=["116-corrig"], RNUMBER=[1.0],
PDIAM=[1800](mm),
                    PLNGTH=[79.5](m), PROUGH=[0.013], PSLOPE=[0.0013](m/m),
                    NHYDin=["108-116"], RDT=[1]
*%-----------------|-----------------------------------------------------------|
ADD HYD             NHYDsum=["Corrigan"], NHYDs to add=["116-corrig"+"Pond-Block"]
*%-----------------|-----------------------------------------------------------|
SAVE HYD            NHYD=["Corrigan"],   # OF PCYCLES=[-1],  ICASEsh=[1]
                    HYD_COMMENT=["Total Flows at Corrigan Pond]
*%-----------------|-----------------------------------------------------------|
```

```
ROUTE RESERVOIR     NHYDout=["Co-P"],  NHYDin=["Corrigan"],
                    RDT=[1](min),
                          TABLE of ( OUTFLOW-STORAGE ) values
                                      (cms) - (ha-m)
                                    [   0.0 ,   0.0 ]
                                    [   0.015 , 0.04118]
                                    [   0.030 , 0.08297]
                                    [   0.045 , 0.12537]
                                    [   0.060 , 0.16837]
                                    [   0.075 , 0.21199]
                                    [   0.090 , 0.27545]
                                    [   0.105 , 0.34650]
                                    [   0.120 , 0.42049]
                                    [   0.135 , 0.50188]
                                    [   0.186 , 0.60307]
                                    [   2.110 , 0.79083]
                                    [   5.874 , 1.00271]
                                    [   11.395 , 1.29643]
                                    [   18.770 , 1.62054]
                                    [   28.143 , 1.97516]
                                    [   -1  ,   -1  ]  (max twenty pts)
                          NHYDovf=["Co-P-OVF"]
*%-----------------|------------------------------------------------------------|
ADD HYD             NHYDsum=["corrig"], NHYDs to
add=["Co-P-OVF"+"Co-P"+"N_TO"+"MH105-JR"+"A8-MJ-JR"+"A9-MJ"+"A10-MJ"+"A11-MJ"+"A12-MJ"+"A
13-MJ"]
*%-----------------|------------------------------------------------------------|
SAVE HYD            NHYD=["corrig"],   # OF PCYCLES=[-1],  ICASEsh=[1]
                    HYD_COMMENT=["Total Flows at Corrigan Pond"]
*%-----------------|------------------------------------------------------------|
*#*******************************************************************************
*#    Corrigan Pond 1
*#    - Rating curve obtained from Barrhaven South MSS modeling
*#    - Tributary Drainage Area to MSS Pond 1 = 145 ha
*#*******************************************************************************
*ROUTE RESERVOIR     NHYDout=["MS_P1"],  NHYDin=["CORRIG"],
*                    RDT=[1](min),
*                          TABLE of ( OUTFLOW-STORAGE ) values
*                                      (cms) - (ha-m)
*                                    [   0.0 ,   0.0 ]
*                                    [   0.06 , 0.58]
*                                    [   -1  ,   -1  ]  (max twenty pts)
*                          NHYDovf=["P1-OVF"]
*%-----------------|------------------------------------------------------------|
*ADD HYD             NHYDsum=["SN_CO"], NHYDs to add=["N_TO"+"P1-OVF"+"MS_P1"]
*%-----------------|------------------------------------------------------------|
*SAVE HYD            NHYD=["SN_CO"],   # OF PCYCLES=[-1],  ICASEsh=[1]
*                    HYD_COMMENT=["Total Flows at Corrigan Drain"]
*%-----------------|------------------------------------------------------------|
*#
*# Hydrograph from Corrigan Drain routed to Jockvale Road
*# Channel X-Section obtained from RVCA Hydraulic Model - Station 2462
*#
ROUTE CHANNEL       NHYDout=["N_MI"] ,NHYDin=["corrig"] ,
                    RDT=[1](min),
                    CHLGTH=[580](m),  CHSLOPE=[0.4448](%),
                                        FPSLOPE=[0.4448](%),
                    SECNUM=[1.0],       NSEG=[3]
                    ( SEGROUGH, SEGDIST (m))=
                      [0.075,-17.72
                      -0.045,17.72
                      0.075,80.62] NSEG times
                    ( DISTANCE (m), ELEVATION (m))=
                    [-83.32, 90.00]
                    [-81.36, 89.50]
                    [-79.12, 89.00]
```

```
                    [-76.13, 88.50]
                    [-20.46, 88.00]
                    [-19.36, 87.50]
                    [-18.51, 87.00]
                    [-17.72, 86.50]
                    [-11.95, 85.24]
                    [-0.11, 85.12]
                    [11.49, 85.20]
                    [17.72, 86.50]
                    [19.74, 87.00]
                    [21.22, 87.50]
                    [22.68, 88.00]
                    [24.28, 88.50]
                    [26.79, 89.00]
                    [71.98, 90.00]
                    [80.62, 90.50]
*%-----------------|-------------------------------------------------------------|
*#*******************************************************************************
*#    Catchment MILLS
*#    - To SWM Facility north of the Jock
*#    - Primarily residental development
*#*******************************************************************************
CONTINUOUS STANDHYD NHYD=["MILLS"], DT=[1]min, AREA=[175.99](ha),
                    XIMP=[0.38], TIMP=[0.38], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[74],
                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
                            LGI=[1118.123](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[18](hrs),   END=-1
*%-----------------|-------------------------------------------------------------|
*#*******************************************************************************
*#    Chapman Mills SWM Pond
*#    - Rating curve obtained from CCL hydraulic modeling
*#*******************************************************************************
ROUTE RESERVOIR     NHYDout=["MILL_P"],  NHYDin=["MILLS"],
                    RDT=[1](min),
                          TABLE of ( OUTFLOW-STORAGE ) values
                                      (cms) - (ha-m)
                                    [   0.0 ,  0.0 ]
                                    [   0.01 , 0.01]
                                    [   0.05 , 0.06]
                                    [   0.09 , 0.11]
                                    [   0.13 , 0.15]
                                    [   0.18 , 0.19]
                                    [   0.28 , 0.28]
                                    [   0.37 , 0.34]
                                    [   0.45 , 0.40]
                                    [   0.51 , 0.44]
                                    [   0.56 , 0.47]
                                    [   0.64 , 0.52]
                                    [   0.76 , 0.59]
                                    [   0.86 , 0.65]
                                    [   1.09 , 0.78]
                                    [   1.44 , 0.96]
                                    [   3.18 , 1.84]
                                    [   4.05 , 2.31]
                                    [   -1  ,  -1  ]  (max twenty pts)
                          NHYDovf=["MIL-OV"]
*%-----------------|-------------------------------------------------------------|
ADD HYD             NHYDsum=["SN_MI"], NHYDs to add=["N_MI"+"MIL-OV"+"MILL_P"]
*%-----------------|-------------------------------------------------------------|
SAVE HYD            NHYD=["SN_MI"],   # OF PCYCLES=[-1],  ICASEsh=[1]
```

```
                    HYD_COMMENT=["Total Flows at Jockvale Road"]
*%-----------------|-----------------------------------------------------------|
*#
*# Hydrograph from Jockvale Road routed to Heart's Desire
*# Channel X-Section obtained from RVCA Hydraulic Model - Station 689
*#
ROUTE CHANNEL       NHYDout=["N_DE"] ,NHYDin=["SN_MI"] ,
                    RDT=[1](min),
                    CHLGTH=[1962](m),  CHSLOPE=[0.2227](%),
                                        FPSLOPE=[0.2227](%),
                    SECNUM=[1.0],       NSEG=[3]
                    ( SEGROUGH, SEGDIST (m))=
                      [0.075,-17.56
                      -0.045,18.27
                      0.075,32.51] NSEG times
                    ( DISTANCE (m), ELEVATION (m))=
                    [-54.07, 85.00]
                    [-39.43, 84.50]
                    [-28.30, 84.00]
                    [-24.12, 83.50]
                    [-22.30, 83.00]
                    [-20.55, 82.50]
                    [-17.56, 82.00]
                    [-12.63, 81.22]
                    [-0.11, 80.75]
                    [11.55, 81.22]
                    [18.27, 82.00]
                    [19.82, 82.50]
                    [22.48, 83.00]
                    [27.90, 83.50]
                    [29.31, 84.00]
                    [30.81, 84.50]
                    [32.51, 85.00]
*%-----------------|-----------------------------------------------------------|
*#****************************************************************************
*#    Catchment DESIRE
*#    - To Jock River (north of the Jock)
*#    - Rural-estate subdivision (Heart's Desire Community)
*#****************************************************************************
CONTINUOUS STANDHYD NHYD=["DESIRE"], DT=[1]min, AREA=[23.78](ha),
                    XIMP=[0.25], TIMP=[0.25], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[77],
                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
                            LGI=[400](m), MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[18](hrs),   END=-1
*%-----------------|-----------------------------------------------------------|
*#****************************************************************************
*#    Catchment JOCKVA
*#    - To Jockvale SWM Facility
*#    - Residential development & golf course
*#    - JFSA 2021-01-11 update JOCKVA after updating CORRIG as per IBI GROUP, July 2008.
*#      JOCKVA area became 225.13 ha instead of 257.63 ha. JOCKVA separated into two areas JOCKVA and EX-LAND 32.5 ha as per IBI GROUP, July 2008.
*#****************************************************************************
CONTINUOUS STANDHYD NHYD=["JOCKVA"], DT=[1]min, AREA=[225.13](ha),
                    XIMP=[0.50], TIMP=[0.50], DWF=[0](cms), LOSS=[2],
                    SCS curve number CN=[74],
                    Pervious   surfaces: IAper=[4.67](mm), SLPP=[1](%),
                            LGP=[40](m), MNP=[0.25], SCP=[0](min),
                    Impervious surfaces: IAimp=[1.57](mm), SLPI=[1](%),
                            LGI=[1310.55](m), MNI=[0.013], SCI=[0](min),
```

```
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),  IaRECimp=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[18](hrs),   END=-1
*%-----------------|------------------------------------------------------------|
ADD HYD             NHYDsum=["JOCKVA-TO"], NHYDs to
add=["EX-LAND-MN"+"JOCKVA"+"B2-MJ"+"B3-MJ"]
*%-----------------|------------------------------------------------------------|
SAVE HYD            NHYD=["JOCKVA-TO"],   # OF PCYCLES=[-1],  ICASEsh=[1]
                    HYD_COMMENT=["Total Flows at KB first pond"]
*%-----------------|------------------------------------------------------------|
*#*******************************************************************************
*#    Jockvale SWM Facility
*#    - Rating curve obtained from Jockvale Servicing Study (CCL 1999)
*#*******************************************************************************
ROUTE RESERVOIR     NHYDout=["JOCK_P"],  NHYDin=["JOCKVA-TO"],
                    RDT=[1](min),
                          TABLE of ( OUTFLOW-STORAGE ) values
                                      (cms) - (ha-m)
                                    [   0.0 ,  0.0 ]
                                    [   0.27 , 0.03]
                                    [   0.28 , 0.55]
                                    [   0.29 , 1.14]
                                    [   0.30 , 1.80]
                                    [   0.31 , 2.32]
                                    [   1.12 , 2.87]
                                    [   2.92 , 3.45]
                                    [   4.64 , 4.07]
                                    [   6.69 , 4.72]
                                    [   9.02 , 5.39]
                                    [   11.62 , 6.10]
                                    [   14.42 , 6.85]
                                    [   17.45 , 7.62]
                                    [   20.69 , 8.44]
                                    [   24.08 , 9.28]
                                    [   27.68 , 10.17]
                                    [   -1  ,  -1  ]  (max twenty pts)
                          NHYDovf=["JO-OVF"]
*%-----------------|------------------------------------------------------------|
ADD HYD             NHYDsum=["SN_DE"], NHYDs to add=["N_DE"+"DESIRE"+"JO-OVF"+"JOCK_P"]
*%-----------------|------------------------------------------------------------|
SAVE HYD            NHYD=["SN_DE"],   # OF PCYCLES=[-1],  ICASEsh=[1]
                    HYD_COMMENT=["Total Flows at Heart's Desire"]
*%-----------------|------------------------------------------------------------|
*#
*# Hydrograph from Heart's Desire routed to Rideau River
*# Channel X-Section obtained from RVCA Hydraulic Model - Station 0
*#
ROUTE CHANNEL       NHYDout=["N1"] ,NHYDin=["SN_DE"] ,
                    RDT=[1](min),
                    CHLGTH=[563](m),  CHSLOPE=[0.9668](%),
                                        FPSLOPE=[0.9668](%),
                    SECNUM=[1.0],       NSEG=[3]
                    ( SEGROUGH, SEGDIST (m))=
                      [0.075,-30.20
                      -0.045,30.20
                      0.075,48.48] NSEG times
                    ( DISTANCE (m), ELEVATION (m))=
                    [-98.46, 81.50]
                    [-92.24, 81.00]
                    [-86.88, 80.50]
                    [-81.54, 80.00]
                    [-74.36, 79.50]
                    [-63.54, 79.00]
                    [-39.23, 78.50]
                    [-34.51, 78.00]
```

```
                    [-33.01, 77.50]
                    [-30.20, 77.00]
                    [-13.42, 76.18]
                    [-1.14, 76.09]
                    [17.06, 76.18]
                    [30.20, 77.00]
                    [32.95, 77.50]
                    [34.06, 78.00]
                    [35.11, 78.50]
                    [36.32, 79.00]
                    [37.74, 79.50]
                    [48.48, 81.50]
*%-----------------|-----------------------------------------------------------|
*#*****************************************************************************
*#    Catchment S-2
*#    - To Jock River (north and south)
*#    - Undeveloped floodplain and river
*#*****************************************************************************
CONTINUOUS NASHYD   NHYD=["S-2"], DT=[1]min, AREA=[102.94](ha),
                    DWF=[0](cms), CN/C=[72],  IA=[4.67](mm),
                    N=[3], TP=[0.40]hrs,
                    Continuous simulation parameters:
                    IaRECper=[4](hrs),
                    SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.010]/(mm),
                    InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                    BaseFlowOption=[1] ,
                    InitGWResVol=[50](mm), GWResK=[0.96](mm/day/mm)
                    VHydCond=[0.055](mm/hr),   END=-1
*%-----------------|-----------------------------------------------------------|
ADD HYD             NHYDsum=["SN_N1"], NHYDs to add=["N1"+"S-2"]
*%-----------------|-----------------------------------------------------------|
SAVE HYD            NHYD=["SN_N1"],   # OF PCYCLES=[-1],  ICASEsh=[1]
                    HYD_COMMENT=["Total Flows at Rideau River"]
*%-----------------|-----------------------------------------------------------|
*#############################################################################
*%  5 yr, 24 hr SCS storm based on OTTAWA CDA IDF Curves
START               TZERO=[0.0],  METOUT=[2],  NSTORM=[1],  NRUN=[5]
*%                   ["C24SC005.stm"] <--storm filename, one per line for NSTORM time
*%-----------------|-----------------------------------------------------------|
*%  10 yr, 24 hr SCS storm based on OTTAWA CDA IDF Curves
START               TZERO=[0.0],  METOUT=[2],  NSTORM=[1],  NRUN=[10]
*%                   ["C24SC010.stm"] <--storm filename, one per line for NSTORM time
*%-----------------|-----------------------------------------------------------|
*%  25 yr, 24 hr SCS storm based on OTTAWA CDA IDF Curves
START               TZERO=[0.0],  METOUT=[2],  NSTORM=[1],  NRUN=[25]
*%                   ["C24SC025.stm"] <--storm filename, one per line for NSTORM time
*%-----------------|-----------------------------------------------------------|
*%  50 yr, 24 hr SCS storm based on OTTAWA CDA IDF Curves
START               TZERO=[0.0],  METOUT=[2],  NSTORM=[1],  NRUN=[50]
*%                   ["C24SC050.stm"] <--storm filename, one per line for NSTORM time
*%-----------------|-----------------------------------------------------------|
*%  100 yr, 3 hr Chicago storm based on OTTAWA CDA IDF Curves
*START               TZERO=[0.0],  METOUT=[2],  NSTORM=[1],  NRUN=[100]
*%                   ["100YC3H.STM"] <--storm filename, one per line for NSTORM time
*%-----------------|-----------------------------------------------------------|
*%  100 yr, 24 hr SCS storm based on OTTAWA CDA IDF Curves
START               TZERO=[0.0],  METOUT=[2],  NSTORM=[1],  NRUN=[100]
*%                   ["C24SC100.stm"] <--storm filename, one per line for NSTORM time
*%-----------------|-----------------------------------------------------------|
*%  100 yr, 3 hr Chicago storm based on OTTAWA CDA IDF Curves
*START               TZERO=[0.0],  METOUT=[2],  NSTORM=[1],  NRUN=[100]
*%                   ["C24SC100.stm"] <--storm filename, one per line for NSTORM time
*START               TZERO=[0.0],  METOUT=[2],  NSTORM=[1],  NRUN=[101]
*%                   ["A24SC100.stm"] <--storm filename, one per line for NSTORM time
*START               TZERO=[0.0],  METOUT=[2],  NSTORM=[1],  NRUN=[102]
```

```
*%                     ["A24SC100_60.stm"] <--storm filename, one per line for NSTORM time
FINISH
```

```
===============================================================================================
 
SSSSS   W   W   M   M   H   H   Y   Y   M   M    OOO         222     000    11   5555   =========
S       W W W   MM MM   H   H    Y Y    MM MM   O   O          2    0   0   11   5
SSSSS   W W W   M M M   HHHHH     Y     M M M   O   O          2    0   0   11   5      Ver 5.500
    S    W W    M   M   H   H     Y     M   M   O   O        222    0   0   11   555    FEB  2015
SSSSS    W W    M   M   H   H     Y     M   M    OOO         2      0   0   11     5    =========
                                                             2      0   0   11     5    # 2549237
      StormWater Management HYdrologic Model                  222     000    11   555    =========
 
***********************************************************************************************
**************************************  SWMHYMO Ver 5.500  ************************************
*****************  A single event and continuous hydrologic simulation model  *****************
*****************     based on the principles of HYMO and its successors      *****************
*****************               OTTHYMO-83 and OTTHYMO-89.                    *****************
***********************************************************************************************
***************** Distributed by:  J.F. Sabourin and Associates Inc.          *****************
*****************                  Ottawa,  Ontario: (613) 836-3884           *****************
*****************                  Gatineau, Quebec: (819) 243-6858           *****************
*****************                  E-Mail: swmhymo@jfsa.Com                   *****************
***********************************************************************************************
 
+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
+++++++++++++++++ Licensed user: JFSAinc.                                     +++++++++++++++++
+++++++++++++++++                  Ottawa              SERIAL#:2549237        +++++++++++++++++
+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
 
***********************************************************************************************
*****************           ++++++ PROGRAM ARRAY DIMENSIONS ++++++            *****************
*****************           Maximum value for ID numbers  :     11            *****************
*****************           Max. number of rainfall points: 105408            *****************
*****************           Max. number of flow points    : 105408            *****************
***********************************************************************************************
 
 
********************************   S U M M A R Y   O U T P U T   *****************************
***********************************************************************************************
*                 RUN DATE: 2021-03-04     TIME: 11:57:49     RUN COUNTER: 002084             *
***********************************************************************************************
* Input   file: T:\PROJ\1474-16\Design\20201026-QuantityControlAnalysis\SWMHYMO\SMR-Model\updated*
*               3\SMR_S-1_SDR-Fr_SD.dat                                                       *
* Output  file: T:\PROJ\1474-16\Design\20201026-QuantityControlAnalysis\SWMHYMO\SMR-Model\updated*
*               3\SMR_S-1_SDR-Fr_SD.out                                                       *
* Summary file: T:\PROJ\1474-16\Design\20201026-QuantityControlAnalysis\SWMHYMO\SMR-Model\updated*
*               3\SMR_S-1_SDR-Fr_SD.sum                                                       *
* User comments:                                                                              *
* 1:__________________________________________________________________________________________*
* 2:__________________________________________________________________________________________*
* 3:__________________________________________________________________________________________*
***********************************************************************************************
 
 
#*****************************************************************************
#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
#*****************************************************************************
#  Project Name: [Jock River]    Project Number: [1474-16]
#  Date         : 04-03-2021
#  Modeller     : [M.M.]
#  Company      : JFSAinc.
#  License #    :  2549237
#*****************************************************************************
# CALIBRATION OF SUMMER MODEL PARAMETERS
# USING CONTINUOUS SIMULATIONS
# Rainfall data from JFSA raingauge installed at site + other gauges by the City
# Use data collected from May 1st to July 14, 2003
# 2020-11-30 change TMJSTO in COMPUTE DUALHYD (TMJSTO = 0.1 instead of 0.0001)
# 2020-12-01 correct pond curve values
# 2020-12-01 change W_CLAR_BRAZ XIMP to 0.55, SLPI=[0.5](%) (impervious slope), and LGI up to 700m
# 2021-02-19 Change the slope for ROUTE CHANNEL Station 2462 (NHYDout=["N_TO"] ,NHYDin=["SN_TO"]) from 0.033 % (as per S
# 2021-02-19 Change the slope for ROUTE CHANNEL Station 5002 (NHYDout=["N_WC"] ,NHYDin=["SN_CE"]) from 0.01 % (as per St
# ---------------------------------------------------------------------------
  ** END OF RUN :    1
 
***********************************************************************************************
 
 
 
 
 
 RUN#:COMMAND#
R0002:C00001----------------------------------------------------------------------------------
     START
      [TZERO =    .00 hrs on        0]
      [METOUT=   2    (1=imperial, 2=metric output)]
      [NSTORM=   1 ]
      [NRUN  = 0002 ]
#*****************************************************************************
#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
#*****************************************************************************
#  Project Name: [Jock River]    Project Number: [1474-16]
#  Date         : 04-03-2021
#  Modeller     : [M.M.]
#  Company      : JFSAinc.
#  License #    :  2549237
#*****************************************************************************
# CALIBRATION OF SUMMER MODEL PARAMETERS
# USING CONTINUOUS SIMULATIONS
# Rainfall data from JFSA raingauge installed at site + other gauges by the City
# Use data collected from May 1st to July 14, 2003
# 2020-11-30 change TMJSTO in COMPUTE DUALHYD (TMJSTO = 0.1 instead of 0.0001)
# 2020-12-01 correct pond curve values
# 2020-12-01 change W_CLAR_BRAZ XIMP to 0.55, SLPI=[0.5](%) (impervious slope), and LGI up to 700m
# 2021-02-19 Change the slope for ROUTE CHANNEL Station 2462 (NHYDout=["N_TO"] ,NHYDin=["SN_TO"]) from 0.033 % (as per S
# 2021-02-19 Change the slope for ROUTE CHANNEL Station 5002 (NHYDout=["N_WC"] ,NHYDin=["SN_CE"]) from 0.01 % (as per St
# ---------------------------------------------------------------------------
R0002:C00002----------------------------------------------------------------------------------
     READ STORM
      Filename = storm.001
      Comment  = Pluie SCS de 24 hres 1:2 ans pour Ottawa CDA
      [SDT=10.00:SDUR=  24.00:PTOT=  45.51]
R0002:C00003----------------------------------------------------------------------------------
     MODIFY STORM
      [RFACT=  1.00:TSHIFT= 960.00 min]
      [SDT=10.00:SDUR=  40.00:PTOT=  45.51]
R0002:C00004----------------------------------------------------------------------------------
     DEFAULT VALUES
      Filename = T:\PROJ\1474-16\Design\20201026-QuantityControlAnalysis\SWMHYMO\SMR-Model\updated3\CitiGate.DEF
      ICASEdv  = 1 (read and print data)
      FileTitle= File comment: [Based onvarious calibration exercises in Onta
                 THE FOLLOWING PARAMETERS ARE USED IN THE DESIGN STANDHYD COM
      Horton's infiltration equation parameters:
      [Fo= 76.20 mm/hr] [Fc=13.20 mm/hr] [DCAY= 4.14 /hr] [F=  .00 mm]
      Parameters for PERVIOUS surfaces in STANDHYD:
      [IAper=   4.67 mm] [LGP=50.00 m] [MNP= .250]
      Parameters for IMPERVIOUS surfaces in STANDHYD:
      [IAimp=   1.57 mm] [CLI= 1.50]   [MNI= .013]
      Parameters used in NASHYD:
      [Ia=   4.67 mm] [N= 3.00]
      Average monthly Pan Evaporation data in    (mm)
   JAN   FEB   MAR   APR   MAY   JUN   JUL   AUG   SEP   OCT   NOV   DEC
   .00   .00   .00   .00   .00   .00   .00   .00   .00   .00   .00   .00
      Average monthly Potential Evapotranspiration in    (mm)
   JAN   FEB   MAR   APR   MAY   JUN   JUL   AUG   SEP   OCT   NOV   DEC
   .00   .00   .00   .00   .00   .00   .00   .00   .00   .00   .00   .00
R0002:C00005----------------------------------------------------------------------------------
     COMPUTE API
      [APIini= 50.00: APIkdy= .8500: APIkdt= .9989]
      {APImax= 80.12: APIavg= 56.74: APImin= 44.87}
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.32
R0002:C00006-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:JR_HW       3680.00    6.204 No_date   37:06   11.47 .252     .000
      [CN= 64.0: N= 3.00: Tp= 7.13]
      [IaREC= 4.00: SMIN= 57.05: SMAX=380.32: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.32
R0002:C00007-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_13        971.00    2.187 No_date   32:37   10.75 .236     .000
      [CN= 61.0: N= 3.00: Tp= 3.76]
      [IaREC= 4.00: SMIN= 64.50: SMAX=430.01: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.80
R0002:C00008-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:JR_GWM      3074.00    3.218 No_date   39:59    9.43 .207     .000
      [CN= 55.0: N= 3.00: Tp=11.33]
      [IaREC= 4.00: SMIN= 83.24: SMAX=554.96: SK= .010]
      [InterEventTime=  12.00]
R0002:C00009-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:JR_ASH      1781.00    5.504 No_date   32:45   13.94 .306     .000
      [CN= 72.0: N= 3.00: Tp= 3.91]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
R0002:C00010-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_11        500.00    2.720 No_date   29:22   11.98 .263     .000
      [CN= 66.0: N= 3.00: Tp= 1.24]
      [IaREC= 4.00: SMIN= 52.62: SMAX=350.79: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.80
R0002:C00011-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:NN_CK       1917.00    4.042 No_date   34:34   11.98 .263     .000
      [CN= 66.0: N= 3.00: Tp= 5.29]
      [IaREC= 4.00: SMIN= 52.62: SMAX=350.79: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.52
R0002:C00012-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_10       5666.00   11.228 No_date   38:07   13.94 .306     .000
      [CN= 72.0: N= 3.00: Tp= 8.00]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.75
R0002:C00013-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:KG_CK       8376.00   11.072 No_date   39:59   11.98 .263     .000
      [CN= 66.0: N= 3.00: Tp=11.66]
      [IaREC= 4.00: SMIN= 52.62: SMAX=350.79: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.68
R0002:C00014-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_9        1132.00    4.434 No_date   30:56   13.35 .293     .000
      [CN= 70.0: N= 3.00: Tp= 2.51]
      [IaREC= 4.00: SMIN= 43.07: SMAX=287.10: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.82
R0002:C00015-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:NC_CK       4464.00    5.504 No_date   39:59   10.98 .241     .000
      [CN= 62.0: N= 3.00: Tp=11.32]
      [IaREC= 4.00: SMIN= 61.90: SMAX=412.66: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.80
R0002:C00016-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_8         131.00     .805 No_date   28:57   11.22 .247     .000
      [CN= 63.0: N= 3.00: Tp=  .90]
      [IaREC= 4.00: SMIN= 59.42: SMAX=396.11: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.65
R0002:C00017-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:HB_DR       3854.00    6.242 No_date   38:46   11.98 .263     .000
      [CN= 66.0: N= 3.00: Tp= 8.42]
      [IaREC= 4.00: SMIN= 52.62: SMAX=350.79: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.82
R0002:C00018-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_7        3197.00    4.651 No_date   36:31    9.85 .217     .000
      [CN= 57.0: N= 3.00: Tp= 6.65]
      [IaREC= 4.00: SMIN= 76.32: SMAX=508.81: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.75
R0002:C00019-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_6         165.00     .413 No_date   33:07   12.24 .269     .000
      [CN= 67.0: N= 3.00: Tp= 4.18]
      [IaREC= 4.00: SMIN= 50.55: SMAX=336.97: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.67
R0002:C00020-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:VG_DR       1332.00    3.148 No_date   35:23   13.94 .306     .000
      [CN= 72.0: N= 3.00: Tp= 5.95]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
R0002:C00021-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_5         224.00    2.597 No_date   28:45   15.91 .350     .000
      [CN= 77.0: N= 3.00: Tp=  .75]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.20
R0002:C00022-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:FL_CK       4945.00   14.839 No_date   33:25   14.57 .320     .000
      [CN= 74.0: N= 3.00: Tp= 4.45]
      [IaREC= 4.00: SMIN= 36.67: SMAX=244.49: SK= .010]
      [InterEventTime=  12.00]
R0002:C00023-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_5A2        20.00     .309 No_date   28:36   17.79 .391     .000
      [CN= 81.0: N= 3.00: Tp=  .62]
      [IaREC= 4.00: SMIN= 25.21: SMAX=168.09: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.61
R0002:C00024-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_5A1      1412.00    3.090 No_date   38:04   15.22 .334     .000
      [CN= 75.0: N= 3.00: Tp= 8.00]
      [IaREC= 4.00: SMIN= 33.81: SMAX=225.43: SK= .010]
      [InterEventTime=  12.00]
R0002:C00025-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_4         585.00    4.325 No_date   29:58   17.79 .391     .000
      [CN= 81.0: N= 3.00: Tp= 1.75]
      [IaREC= 4.00: SMIN= 25.21: SMAX=168.09: SK= .010]
      [InterEventTime=  12.00]
R0002:C00026-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:LM_CK       1021.00    5.747 No_date   30:50   17.39 .382     .000
      [CN= 80.0: N= 3.00: Tp= 2.46]
      [IaREC= 4.00: SMIN= 26.32: SMAX=175.50: SK= .010]
      [InterEventTime=  12.00]
R0002:C00027-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_2         177.00    2.052 No_date   28:45   15.91 .350     .000
      [CN= 77.0: N= 3.00: Tp=  .75]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0002:C00028-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SM_DR       1122.00    5.337 No_date   31:50   17.79 .391     .000
      [CN= 81.0: N= 3.00: Tp= 3.25]
      [IaREC= 4.00: SMIN= 25.21: SMAX=168.09: SK= .010]
      [InterEventTime=  12.00]
R0002:C00029-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:MO_DR       2737.00   11.528 No_date   31:35   15.56 .342     .000
      [CN= 76.0: N= 3.00: Tp= 3.03]
      [IaREC= 4.00: SMIN= 32.46: SMAX=216.39: SK= .010]
      [InterEventTime=  12.00]
#
# Routing hydrographs
#
# Starting with the addition of Jock River Headwater and Subwatershed 13
#
R0002:C00030-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:JR_HW       3680.00    6.204 No_date   37:06   11.47  n/a     .000
                     +    1.0 02:SW_13        971.00    2.187 No_date   32:37   10.75  n/a     .000
                  SUM=    1.0 01:S_N13       4651.00    7.871 No_date   35:37   11.32  n/a     .000
#
# Sum of hydrographs from Node 13 routed to Node 13A
# (Approximated cross-section - see cross-section 258)
# Use n=0.04 for summer conditions and n=0.025 for spring conditions
#
R0002:C00031-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N13       4651.00    7.871 No_date   35:37   11.32  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N13A        4651.00    6.258 No_date   39:59   11.32  n/a     .000
      [L/S/n= 9074./ .022/.040]
      {Vmax=  .429:Dmax= 2.557}
#
# Addition of Subwatershed Jock River at Goodwood Marsh to Node 13A
#
R0002:C00032-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N13A        4651.00    6.258 No_date   39:59   11.32  n/a     .000
                     +    1.0 02:JR_GWM      3074.00    3.218 No_date   39:59    9.43  n/a     .000
                  SUM=    1.0 01:SN13A       7725.00    9.475 No_date   39:59   10.57  n/a     .000
#
# Insertion of a reservoir to simulate the effects of the Goodwood Marsh
#
R0002:C00033-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:SN13A       7725.00    9.475 No_date   39:59   10.57  n/a     .000
                out <=    1.0 01:RES_GM      7725.00    2.619 No_date   55:07   10.57  n/a     .000
     {MxStoUsed=.3585E+02  m3}
#
R0002:C00034-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:RES_GM      7725.00    2.619 No_date   55:07   10.57  n/a     .000
      fname :H_RESGM
      remark:Outflow from Res GM
# Output of Reservoir Goodwood Marsh routed from Node 13A to Node 12
# (Approximated cross-section - see cross-section 258)
# Use n=0.04 for summer conditions and n=0.025 for spring conditions
R0002:C00035-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:RES_GM      7725.00    2.619 No_date   55:07   10.57  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N12         7725.00    2.609 No_date   58:09   10.57  n/a     .000
      [L/S/n= 5926./ .076/.040]
      {Vmax=  .501:Dmax= 1.329}
#
# Addition of Subwatershed Jock River at Ashton to Node 12
#
R0002:C00036-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N12         7725.00    2.609 No_date   58:08   10.57  n/a     .000
                     +    1.0 02:JR_ASH      1781.00    5.504 No_date   32:45   13.94  n/a     .000
                  SUM=    1.0 01:S_N12       9506.00    7.458 No_date   32:50   11.20  n/a     .000
R0002:C00037-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:S_N12       9506.00    7.458 No_date   32:50   11.20  n/a     .000
      fname :H_SN12
      remark:flow at S_N12 near Ashton
#
# Sum of hydrographs from Node 12 routed to Node 11
# (Approximated cross-section - see cross-section 258)
# Use n=0.04 for summer conditions and n=0.025 for spring conditions
#
# Sum of hydrographs from Node 12 routed to Node 11 with Dummy section 248
#
R0002:C00038-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N12       9506.00    7.458 No_date   32:50   11.20  n/a     .000
     [RDT= 1.00] out<-    1.0 01:Dum11       9506.00    7.379 No_date   33:12   11.20  n/a     .000
      [L/S/n=  972./ .054/.040]
      {Vmax=  .591:Dmax= 2.108}
#
# Addition of Subwatershed 11 and No Name Creek to Node 11
```

```
#
R0002:C00039------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:Dum11       9506.00    7.379 No_date   33:12   11.20  n/a     .000
                      +    1.0 02:SW_11        500.00    2.720 No_date   29:22   11.98  n/a     .000
                      +    1.0 02:NN_CK       1917.00    4.042 No_date   34:34   11.98  n/a     .000
                   SUM=    1.0 01:S_N11      11923.00   12.077 No_date   33:14   11.36  n/a     .000
#
# Sum of hydrographs from Node 11 routed to Node 10
# Section 1
#
R0002:C00040------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->     1.0 02:S_N11      11923.00   12.077 No_date   33:14   11.36  n/a     .000
     [RDT= 1.00] out<-     1.0 01:N10        11923.00    8.276 No_date   39:46   11.36  n/a     .000
      [L/S/n=14028./ .157/.040]
      {Vmax=  .462:Dmax=  .886}
#
# Addition of Subwatershed 10 to Node 10
#
R0002:C00041------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:N10        11923.00    8.276 No_date   39:46   11.36  n/a     .000
                      +    1.0 02:SW_10       5666.00   11.228 No_date   38:07   13.94  n/a     .000
                   SUM=    1.0 01:S_N10      17589.00   19.451 No_date   38:31   12.19  n/a     .000
R0002:C00042------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD               1.0 01:S_N10      17589.00   19.451 No_date   38:31   12.19  n/a     .000
      fname :H_SN10
      remark:flow at S_N10: N10 + SW_10
# Addition of Kings Creek to S_N10
#
R0002:C00043------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:S_N10      17589.00   19.451 No_date   38:31   12.19  n/a     .000
                      +    1.0 02:KG_CK       8376.00   11.072 No_date   39:59   11.98  n/a     .000
                   SUM=    1.0 01:S_N10A     25965.00   30.328 No_date   39:58   12.12  n/a     .000
#
# Sum of hydrographs from Node 10 routed to Node 9
# Section 2
#
R0002:C00044------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->     1.0 02:S_N10A     25965.00   30.328 No_date   39:58   12.12  n/a     .000
     [RDT= 1.00] out<-     1.0 01:N9         25965.00   29.579 No_date   39:59   12.12  n/a     .000
      [L/S/n= 3982./ .075/.040]
      {Vmax=  .595:Dmax= 1.208}
#
# Addition of Subwatershed 9 and Nichols Creek to Node 9
#
R0002:C00045------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:N9         25965.00   29.579 No_date   39:59   12.12  n/a     .000
                      +    1.0 02:SW_9        1132.00    4.434 No_date   30:56   13.35  n/a     .000
                      +    1.0 02:NC_CK       4464.00    5.504 No_date   39:59   10.98  n/a     .000
                   SUM=    1.0 01:S_N9       31561.00   36.313 No_date   39:59   12.00  n/a     .000
#
# Sum of hydrographs from Node 9 routed to Node 8
# Section 3
#
R0002:C00046------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->     1.0 02:S_N9       31561.00   36.313 No_date   39:59   12.00  n/a     .000
     [RDT= 1.00] out<-     1.0 01:N8         31561.00   34.173 No_date   39:59   12.00  n/a     .000
      [L/S/n= 2269./ .088/.045]
      {Vmax=  .418:Dmax= 1.281}
#
# Addition of Subwatershed 8 and Hobb's Drain to Node 8
#
R0002:C00047------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:N8         31561.00   34.173 No_date   39:59   12.00  n/a     .000
                      +    1.0 02:SW_8         131.00     .805 No_date   28:57   11.22  n/a     .000
                      +    1.0 02:HB_DR       3854.00    6.242 No_date   38:46   11.98  n/a     .000
                   SUM=    1.0 01:S_N8       35546.00   40.474 No_date   39:59   12.00  n/a     .000
#
# Sum of hydrographs from Node 8 routed to Node 7
# Section 4
#
R0002:C00048------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->     1.0 02:S_N8       35546.00   40.474 No_date   39:59   12.00  n/a     .000
     [RDT= 1.00] out<-     1.0 01:N7         35546.00   32.891 No_date   44:30   12.00  n/a     .000
      [L/S/n= 3750./ .053/.070]
      {Vmax=  .208:Dmax= 1.651}
#
# Addition of Subwatershed 7 to Node 7
#
R0002:C00049------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:N7         35546.00   32.891 No_date   44:30   12.00  n/a     .000
                      +    1.0 02:SW_7        3197.00    4.651 No_date   36:31    9.85  n/a     .000
                   SUM=    1.0 01:S_N7       38743.00   35.071 No_date   43:33   11.82  n/a     .000
R0002:C00050------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD               1.0 01:S_N7       38743.00   35.071 No_date   43:33   11.82  n/a     .000
      fname :H_SN7
      remark:flow at S_N7: N7 + SW_7
# Insertion of a reservoir to simulate the effects of the Richmond Fen.
# Storage area and volumes were estimated from available topo maps.
# Release rate from fen was assumed to be controlled by the downstream
# river cross-section for summer conditions.  It is was assumed that for up to
# 0.75 m of water, the main channel of the river provided the storage.  Above
# this depth, the wetland starts to signigicantly store water.
#
R0002:C00051------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->     1.0 02:S_N7       38743.00   35.071 No_date   43:33   11.82  n/a     .000
                out <=     1.0 01:RES_RF     38743.00   23.265 No_date   55:09   11.82  n/a     .000
     {MxStoUsed=.7801E+02  m3}
R0002:C00052------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD               1.0 01:RES_RF     38743.00   23.265 No_date   55:09   11.82  n/a     .000
      fname :H_ResRF
      remark:outflow of Richmond Fen
#
# Sum of hydrographs from Node 7 routed to Node 6
# Section 5
#
R0002:C00053------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->     1.0 02:RES_RF     38743.00   23.265 No_date   55:09   11.82  n/a     .000
     [RDT= 1.00] out<-     1.0 01:N6         38743.00   23.228 No_date   56:38   11.82  n/a     .000
      [L/S/n= 3056./ .082/.025]
      {Vmax=  .432:Dmax=  .808}
#
# Addition of Subwatershed 6 and Van Gaal Drain to Node 6
#
R0002:C00054------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:N6         38743.00   23.228 No_date   56:38   11.82  n/a     .000
                      +    1.0 02:SW_6         165.00     .413 No_date   33:07   12.24  n/a     .000
                      +    1.0 02:VG_DR       1332.00    3.148 No_date   35:23   13.94  n/a     .000
                   SUM=    1.0 01:S_N6       40240.01   23.318 No_date   39:59   11.89  n/a     .000
#
# Sum of hydrographs from Node 6 routed to Node 5
# Section 6
#
R0002:C00055------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->     1.0 02:S_N6       40240.01   23.318 No_date   39:59   11.89  n/a     .000
     [RDT= 1.00] out<-     1.0 01:N5         40240.01   23.285 No_date   56:09   11.89  n/a     .000
      [L/S/n= 1852./ .054/.035]
      {Vmax=  .378:Dmax=  .917}
#
# Addition of Subwatershed 5 and Flowing Creek to Node 5
#
R0002:C00056------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:N5         40240.01   23.285 No_date   56:09   11.89  n/a     .000
                      +    1.0 02:SW_5         224.00    2.597 No_date   28:45   15.91  n/a     .000
                      +    1.0 02:FL_CK       4945.00   14.839 No_date   33:25   14.57  n/a     .000
                   SUM=    1.0 01:S_N5       45409.01   33.166 No_date   37:08   12.20  n/a     .000
#
# Sum of hydrographs from Node 5 routed to Node 5A
# Section 7
#
R0002:C00057------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->     1.0 02:S_N5       45409.01   33.166 No_date   37:08   12.20  n/a     .000
     [RDT= 1.00] out<-     1.0 01:N5A        45409.01   33.135 No_date   37:20   12.20  n/a     .000
      [L/S/n=  556./ .090/.040]
      {Vmax=  .443:Dmax=  .937}
#
# Addition of Subwatershed 5A1 and Subwatershed 5A2 to Node 5A
#
R0002:C00058------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:N5A        45409.01   33.135 No_date   37:20   12.20  n/a     .000
                      +    1.0 02:SW_5A2        20.00     .309 No_date   28:36   17.79  n/a     .000
                      +    1.0 02:SW_5A1      1412.00    3.090 No_date   38:04   15.22  n/a     .000
                   SUM=    1.0 01:S_N5A      46841.01   36.236 No_date   37:28   12.30  n/a     .000
#
# Sum of hydrographs from Node 5A routed to Node 4
# Section 8
#
R0002:C00059------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->     1.0 02:S_N5A      46841.01   36.236 No_date   37:28   12.30  n/a     .000
     [RDT= 1.00] out<-     1.0 01:N4         46841.01   35.288 No_date   39:22   12.30  n/a     .000
      [L/S/n= 4630./ .043/.035]
      {Vmax=  .695:Dmax= 2.844}
#
# Addition of Subwatershed 4 and Leamy Creek to Node 4
#
R0002:C00060------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:N4         46841.01   35.288 No_date   39:22   12.30  n/a     .000
                      +    1.0 02:SW_4         585.00    4.325 No_date   29:58   17.79  n/a     .000
                      +    1.0 02:LM_CK       1021.00    5.747 No_date   30:50   17.39  n/a     .000
                   SUM=    1.0 01:S_N4       48447.00   37.581 No_date   38:13   12.47  n/a     .000
R0002:C00061------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD               1.0 01:S_N4       48447.00   37.581 No_date   38:13   12.47  n/a     .000
      fname :S_N4.0002
      remark:flow at S_N4
#
# Sum of hydrographs from Node 4 routed to Node 2
# Section 9
#
R0002:C00062------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->     1.0 02:S_N4       48447.00   37.581 No_date   38:13   12.47  n/a     .000
     [RDT= 1.00] out<-     1.0 01:N2         48447.00   37.455 No_date   38:49   12.47  n/a     .000
      [L/S/n= 1667./ .060/.040]
      {Vmax=  .715:Dmax= 2.845}
#
# Addition of Subwatershed 2 with Monohan Drain and Smith Drain to Node 2
#
R0002:C00063------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:N2         48447.00   37.455 No_date   38:49   12.47  n/a     .000
                      +    1.0 02:SW_2         177.00    2.052 No_date   28:45   15.91  n/a     .000
                      +    1.0 02:SM_DR       1122.00    5.337 No_date   31:50   17.79  n/a     .000
                      +    1.0 02:MO_DR       2737.00   11.528 No_date   31:35   15.56  n/a     .000
                   SUM=    1.0 01:S_N2       52483.00   46.294 No_date   33:33   12.76  n/a     .000
R0002:C00064------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD               1.0 01:S_N2       52483.00   46.294 No_date   33:33   12.76  n/a     .000
      fname :H_SN2
      remark:flow at S_N2 Jock River Gauge at Moodie Dr.
#
# Sum of hydrographs from Node 2 routed to Node 1
# Section 10
#
#******************************************************************************
#
# Hydrograph from Node 2 routed to Node 416
# Channel X-Section obtained from RVCA Hydraulic Model - Station 9025
#
R0002:C00065------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->     1.0 02:S_N2       52483.00   46.294 No_date   33:33   12.76  n/a     .000
     [RDT= 1.00] out<-     1.0 01:N_416      52483.00   45.431 No_date   35:37   12.76  n/a     .000
      [L/S/n= 2327./ .050/.055]
      {Vmax=  .577:Dmax= 2.212}
#******************************************************************************
#    Catchment SW-1a
#    - Portion of RVCA catchment SW_1 outside of Reach 1 subwatershed
#    - Undeveloped agricultural land
#******************************************************************************
R0002:C00066------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD      1.0 01:SW_1a        536.42    1.885 No_date   31:21   13.01 .286     .000
      [CN= 72.0: N= 3.00: Tp= 2.79]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
R0002:C00067------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD    1.0 01:S-1-Okeefe    44.93    3.420 No_date   28:04   32.20 .707     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .75:LGI= 547.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0002:C00068------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD        1.0 01:S-1-Okeefe    44.93    3.420 No_date   28:04   32.20  n/a     .000
     Major System   /      1.0 02:S-1-OkMJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \      1.0 03:S-1-OkMN      44.93    3.420 No_date   28:04   32.20  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00069------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:S-1-OkMJ        .00     .000 No_date    0:00     .00  n/a     .000
                      +    1.0 02:S-1-OkMN      44.93    3.420 No_date   28:04   32.20  n/a     .000
                   SUM=    1.0 01:S-1-OkS       44.93    3.420 No_date   28:04   32.20  n/a     .000
R0002:C00070------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->     1.0 02:S-1-OkS       44.93    3.420 No_date   28:04   32.20  n/a     .000
                out <=     1.0 01:S-1-OkSR      44.93     .261 No_date   29:32   32.20  n/a     .000
           overflow <=     1.0 03:S-1-OkSovf      .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.8722E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00071------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:N_416      52483.00   45.431 No_date   35:37   12.76  n/a     .000
                      +    1.0 02:SW_1a        536.42    1.885 No_date   31:21   13.01  n/a     .000
                      +    1.0 02:S-1-OkSR      44.93     .261 No_date   29:32   32.20  n/a     .000
                      +    1.0 02:S-1-OkSovf      .00     .000 No_date    0:00     .00  n/a     .000
                   SUM=    1.0 01:SN_416     53064.36   46.727 No_date   35:24   12.78  n/a     .000
R0002:C00072------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD               1.0 01:SN_416     53064.36   46.727 No_date   35:24   12.78  n/a     .000
      fname :SN_416.0002
      remark:Total Flows at Highway 416 before Station 7245
#
# Hydrograph from Node 416 routed to Node at Okeefe drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 7245
#
R0002:C00073------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->     1.0 02:SN_416     53064.36   46.727 No_date   35:24   12.78  n/a     .000
     [RDT= 1.00] out<-     1.0 01:N_OK       53064.36   46.720 No_date   35:24   12.78  n/a     .000
      [L/S/n=  497./ .302/.055]
      {Vmax= 1.191:Dmax= 1.882}
#******************************************************************************
#    Catchment OKEEFE
#    - To O'Keefe drain (north of the Jock)
#    - Developed with assumed 43% imp.
#    - 2020-12-01 add Okeefe model (Area 513.02 HA) instead of current Okeefe (Area 513.02 HA)
#    - 2020-11-20 Okeefe detailed model was added as per the NOVATECH SWMHYMO model (Citi-Gate 2014).
#******************************************************************************
R0002:C00074------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD      1.0 01:O-1           63.72     .305 No_date   28:59    9.62 .211     .000
      [CN= 61.0: N= 3.00: Tp=  .90]
      [IaREC= 4.00: SMIN= 64.50: SMAX=430.01: SK= .010]
      [InterEventTime=  12.00]
R0002:C00075------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->     1.0 02:O-1           63.72     .305 No_date   28:59    9.62  n/a     .000
     [RDT= 1.00] out<-     1.0 01:O-1R          63.72     .272 No_date   29:20    9.62  n/a     .000
      [L/S/n=  960./ .630/.043]
      {Vmax=  .589:Dmax=  .212}
R0002:C00076------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD      1.0 01:O-2           28.61     .110 No_date   29:14    9.11 .200     .000
      [CN= 57.0: N= 3.00: Tp= 1.10]
      [IaREC= 4.00: SMIN= 76.32: SMAX=508.81: SK= .010]
      [InterEventTime=  12.00]
R0002:C00077------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD      1.0 01:O-4           46.94     .126 No_date   29:02    7.06 .155     .000
      [CN= 49.0: N= 3.00: Tp=  .90]
      [IaREC= 4.00: SMIN=104.59: SMAX=697.25: SK= .010]
      [InterEventTime=  12.00]
R0002:C00078------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:O-1R          63.72     .272 No_date   29:20    9.62  n/a     .000
                      +    1.0 02:O-2           28.61     .110 No_date   29:14    9.11  n/a     .000
                      +    1.0 02:O-4           46.94     .126 No_date   29:02    7.06  n/a     .000
                   SUM=    1.0 01:OKF-N        139.27     .504 No_date   29:15    8.65  n/a     .000
R0002:C00079------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->     1.0 02:OKF-N        139.27     .504 No_date   29:15    8.65  n/a     .000
     [RDT= 1.00] out<-     1.0 01:OKF-NR       139.27     .502 No_date   29:20    8.65  n/a     .000
      [L/S/n=  210./ .810/.043]
      {Vmax=  .722:Dmax=  .437}
R0002:C00080------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD      1.0 01:O-6           16.46     .042 No_date   28:47    6.40 .141     .000
      [CN= 43.0: N= 3.00: Tp=  .70]
      [IaREC= 4.00: SMIN=134.47: SMAX=896.47: SK= .010]
      [InterEventTime=  12.00]
R0002:C00081------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD    1.0 01:O-3           39.67     .402 No_date   28:28   11.03 .242     .000
      [XIMP=.15:TIMP=.30]
      [LOSS= 2 :CN= 50.0]
      [Pervious     area: IAper= 4.67:SLPP= .32:LGP= 440.:MNP=.035:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .32:LGI=1880.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 99.77: SMAX=665.12: SK= .010]
R0002:C00082------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD    1.0 01:O-5           60.63     .937 No_date   28:10   12.08 .265     .000
      [XIMP=.13:TIMP=.26]
      [LOSS= 2 :CN= 61.0]
      [Pervious     area: IAper= 4.67:SLPP=1.38:LGP= 550.:MNP=.035:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.38:LGI=1450.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 64.50: SMAX=430.01: SK= .010]
R0002:C00083------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:OKF-NR       139.27     .502 No_date   29:20    8.65  n/a     .000
                      +    1.0 02:O-3           39.67     .402 No_date   28:28   11.03  n/a     .000
                      +    1.0 02:O-5           60.63     .937 No_date   28:10   12.08  n/a     .000
                      +    1.0 02:O-6           16.46     .042 No_date   28:47    6.40  n/a     .000
                   SUM=    1.0 01:PT1          256.03    1.441 No_date   28:30    9.69  n/a     .000
R0002:C00084------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD      1.0 01:O-7            5.28     .024 No_date   28:38    8.02 .176     .000
      [CN= 54.0: N= 3.00: Tp=  .60]
      [IaREC= 4.00: SMIN= 87.01: SMAX=580.07: SK= .010]
      [InterEventTime=  12.00]
R0002:C00085------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:PT1          256.03    1.441 No_date   28:30    9.69  n/a     .000
                      +    1.0 02:O-7            5.28     .024 No_date   28:38    8.02  n/a     .000
                   SUM=    1.0 01:FF           261.31    1.465 No_date   28:30    9.65  n/a     .000
R0002:C00086------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->     1.0 02:FF           261.31    1.465 No_date   28:30    9.65  n/a     .000
     [RDT= 1.00] out<-     1.0 01:DRAIN1       261.31    1.446 No_date   28:36    9.65  n/a     .000
      [L/S/n=  302./1.000/.043]
      {Vmax=  .953:Dmax=  .543}
R0002:C00087------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD      1.0 01:D1             1.17     .026 No_date   28:12   15.66 .344     .000
      [CN= 84.0: N= 3.00: Tp=  .28]
      [IaREC= 4.00: SMIN= 21.09: SMAX=140.62: SK= .010]
      [InterEventTime=  12.00]
R0002:C00088------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD    1.0 01:A1             2.50     .256 No_date   28:01   34.35 .755     .000
      [XIMP=.68:TIMP=.85]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 224.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00089------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->     1.0 02:A1             2.50     .256 No_date   28:01   34.35  n/a     .000
                out <=     1.0 01:A1-STR         2.50     .048 No_date   28:35   34.35  n/a     .000
           overflow <=     1.0 03:A1-OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.4261E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00090------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD    1.0 01:ST-2            .59     .044 No_date   28:00   25.32 .556     .000
      [XIMP=.46:TIMP=.57]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 109.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00091------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->     1.0 02:ST-2            .59     .044 No_date   28:00   25.32  n/a     .000
                out <=     1.0 01:ST2STR          .59     .041 No_date   28:02   25.32  n/a     .000
           overflow <=     1.0 03:ST2OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.7924E-03  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00092------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD      1.0 01:O-8           60.55     .405 No_date   29:05   12.46 .274     .000
      [CN= 69.0: N= 3.00: Tp= 1.00]
      [IaREC= 4.00: SMIN= 44.82: SMAX=298.82: SK= .010]
      [InterEventTime=  12.00]
R0002:C00093------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->     1.0 02:O-8           60.55     .405 No_date   29:05   12.46  n/a     .000
```

```
      [RDT= 1.00] out<-    1.0 01:O8PIPE        60.55     .402 No_date   29:10   12.46  n/a     .000
       [L/S/n=  335./ .100/.013]
       {Vmax=  .842:Dmax=  .265}
       {HGTH= 1.20:WDTH= 1.80}
R0002:C00094------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:DRAIN1       261.31    1.446 No_date   28:36    9.65  n/a     .000
                     +     1.0 02:D1             1.17     .026 No_date   28:12   15.66  n/a     .000
                     +     1.0 02:A1-STR         2.50     .048 No_date   28:35   34.35  n/a     .000
                     +     1.0 02:A1-OVF          .00     .000 No_date    0:00     .00  n/a     .000
                     +     1.0 02:ST2STR          .59     .041 No_date   28:02   25.32  n/a     .000
                     +     1.0 02:ST2OVF          .00     .000 No_date    0:00     .00  n/a     .000
                     +     1.0 02:O8PIPE        60.55     .402 No_date   29:10   12.46  n/a     .000
                  SUM=     1.0 01:ST2-IN       326.12    1.834 No_date   28:39   10.41  n/a     .000
R0002:C00095------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A7             3.51     .348 No_date   28:02   34.35 .755     .000
      [XIMP=.68:TIMP=.85]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 265.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00096------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:A7             3.51     .348 No_date   28:02   34.35  n/a     .000
                out <=    1.0 01:A7-STR         3.51     .067 No_date   28:36   34.35  n/a     .000
           overflow <=    1.0 03:A7-OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.6002E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00097------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:ST-3            .71     .053 No_date   28:00   25.32 .556     .000
      [XIMP=.46:TIMP=.57]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 119.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00098------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:ST-3            .71     .053 No_date   28:00   25.32  n/a     .000
                out <=    1.0 01:ST3STR          .71     .050 No_date   28:02   25.32  n/a     .000
           overflow <=    1.0 03:ST3OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.7947E-03  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00099------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:ST2-IN       326.12    1.834 No_date   28:39   10.41  n/a     .000
                     +     1.0 02:A7-STR         3.51     .067 No_date   28:36   34.35  n/a     .000
                     +     1.0 02:A7-OVF          .00     .000 No_date    0:00     .00  n/a     .000
                     +     1.0 02:ST3STR          .71     .050 No_date   28:02   25.32  n/a     .000
                     +     1.0 02:ST3OVF          .00     .000 No_date    0:00     .00  n/a     .000
                  SUM=     1.0 01:PT2ST3       330.34    1.912 No_date   28:38   10.70  n/a     .000
R0002:C00100------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:PT2ST3       330.34    1.912 No_date   28:38   10.70  n/a     .000
     [RDT= 1.00] out<-    1.0 01:DRAIN2       330.34    1.821 No_date   28:57   10.70  n/a     .000
      [L/S/n=  592./ .230/.043]
      {Vmax=  .681:Dmax=  .785}
R0002:C00101------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:D2             2.28     .021 No_date   29:07   15.66 .344     .000
      [CN= 84.0: N= 3.00: Tp=  .99]
      [IaREC= 4.00: SMIN= 21.09: SMAX=140.62: SK= .010]
      [InterEventTime=  12.00]
R0002:C00102------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A17           12.04    1.030 No_date   28:04   34.35 .755     .000
      [XIMP=.68:TIMP=.85]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 491.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00103------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:A17           12.04    1.030 No_date   28:04   34.35  n/a     .000
                out <=    1.0 01:A17STR        12.04     .220 No_date   28:42   34.35  n/a     .000
           overflow <=    1.0 03:A17OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.2030E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00104------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:ST-4            .35     .027 No_date   28:00   25.32 .556     .000
      [XIMP=.46:TIMP=.57]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=  84.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00105------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:ST-4            .35     .027 No_date   28:00   25.32  n/a     .000
                out <=    1.0 01:ST4STR          .35     .023 No_date   28:03   25.32  n/a     .000
           overflow <=    1.0 03:ST4OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.7487E-03  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00106------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A18            5.30     .500 No_date   28:03   34.35 .755     .000
      [XIMP=.68:TIMP=.85]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 326.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00107------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:A18            5.30     .500 No_date   28:03   34.35  n/a     .000
                out <=    1.0 01:A18STR         5.30     .099 No_date   28:38   34.35  n/a     .000
           overflow <=    1.0 03:A18OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.9042E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00108------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:DRAIN2       330.34    1.821 No_date   28:57   10.70  n/a     .000
                     +     1.0 02:D2             2.28     .021 No_date   29:07   15.66  n/a     .000
                     +     1.0 02:A17STR        12.04     .220 No_date   28:42   34.35  n/a     .000
                     +     1.0 02:A17OVF          .00     .000 No_date    0:00     .00  n/a     .000
                     +     1.0 02:ST4STR          .35     .023 No_date   28:03   25.32  n/a     .000
                     +     1.0 02:ST4OVF          .00     .000 No_date    0:00     .00  n/a     .000
                     +     1.0 02:A18STR         5.30     .099 No_date   28:38   34.35  n/a     .000
                     +     1.0 02:A18OVF          .00     .000 No_date    0:00     .00  n/a     .000
                  SUM=     1.0 01:PT3ST4       350.31    2.146 No_date   28:54   11.92  n/a     .000
R0002:C00109------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:PT3ST4       350.31    2.146 No_date   28:54   11.92  n/a     .000
     [RDT= 1.00] out<-    1.0 01:DRAIN3       350.31    2.088 No_date   29:08   11.92  n/a     .000
      [L/S/n=  525./ .230/.043]
      {Vmax=  .707:Dmax=  .833}
R0002:C00110------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:D3             2.51     .033 No_date   28:46   17.40 .382     .000
      [CN= 86.0: N= 3.00: Tp=  .73]
      [IaREC= 4.00: SMIN= 17.43: SMAX=116.21: SK= .010]
      [InterEventTime=  12.00]
R0002:C00111------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:C1             3.41     .339 No_date   28:02   34.35 .755     .000
      [XIMP=.68:TIMP=.85]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 261.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00112------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:C1             3.41     .339 No_date   28:02   34.35  n/a     .000
                out <=    1.0 01:C1-STR         3.41     .065 No_date   28:36   34.35  n/a     .000
           overflow <=    1.0 03:C1-OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.5806E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00113------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:ST-5            .45     .034 No_date   28:00   25.32 .556     .000
      [XIMP=.46:TIMP=.57]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=  95.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00114------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:ST-5            .45     .034 No_date   28:00   25.32  n/a     .000
                out <=    1.0 01:ST5STR          .45     .031 No_date   28:03   25.32  n/a     .000
           overflow <=    1.0 03:ST5OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.7682E-03  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00115------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:DRAIN3       350.31    2.088 No_date   29:08   11.92  n/a     .000
                     +     1.0 02:D3             2.51     .033 No_date   28:46   17.40  n/a     .000
                     +     1.0 02:C1-STR         3.41     .065 No_date   28:36   34.35  n/a     .000
                     +     1.0 02:C1-OVF          .00     .000 No_date    0:00     .00  n/a     .000
                     +     1.0 02:ST5STR          .45     .031 No_date   28:03   25.32  n/a     .000
                     +     1.0 02:ST5OVF          .00     .000 No_date    0:00     .00  n/a     .000
                  SUM=     1.0 01:ST5-E        356.68    2.174 No_date   29:07   12.19  n/a     .000
R0002:C00116------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:STRAND         7.59     .471 No_date   28:13   33.47 .735     .000
      [XIMP=.64:TIMP=.85]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1230.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00117------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:STRAND         7.59     .471 No_date   28:13   33.47  n/a     .000
                out <=    1.0 01:S-POND         7.59     .032 No_date   30:14   33.47  n/a     .000
           overflow <=    1.0 03:S-OVF           .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.1805E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00118------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:ST5-E        356.68    2.174 No_date   29:07   12.19  n/a     .000
                     +     1.0 02:S-POND         7.59     .032 No_date   30:14   33.47  n/a     .000
                     +     1.0 02:S-OVF           .00     .000 No_date    0:00     .00  n/a     .000
                  SUM=     1.0 01:SSAOUT       364.27    2.204 No_date   29:07   12.63  n/a     .000
R0002:C00119------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD               1.0 01:SSAOUT       364.27    2.204 No_date   29:07   12.63  n/a     .000
      fname :SSAOUT.0002
      remark:SSAOUT
R0002:C00120------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:Area-A        66.75    3.902 No_date   28:13   32.66 .718     .000
      [XIMP=.64:TIMP=.80]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1155.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00121------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD               1.0 01:Area-A        66.75    3.902 No_date   28:13   32.66  n/a     .000
      fname :Area-A.0002
      remark:SMWF-A Inflow
R0002:C00122------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:Area-A        66.75    3.902 No_date   28:13   32.66  n/a     .000
                out <=    1.0 01:SWMF-A        66.75     .126 No_date   32:26   32.66  n/a     .000
           overflow <=    1.0 03:SWMAOV          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.1708E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00123------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD               1.0 01:SWMF-A        66.75     .126 No_date   32:26   32.66  n/a     .000
      fname :SWMF-A.0002
      remark:SMWF-A Outflow
R0002:C00124------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:SSAOUT       364.27    2.204 No_date   29:07   12.63  n/a     .000
                     +     1.0 02:SWMF-A        66.75     .126 No_date   32:26   32.66  n/a     .000
                     +     1.0 02:SWMAOV          .00     .000 No_date    0:00     .00  n/a     .000
                  SUM=     1.0 01:PT4ST5       431.02    2.323 No_date   29:07   15.73  n/a     .000
R0002:C00125------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:C6             1.87     .196 No_date   28:01   34.35 .755     .000
      [XIMP=.68:TIMP=.85]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 193.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00126------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:C6             1.87     .196 No_date   28:01   34.35  n/a     .000
                out <=    1.0 01:C6-STR         1.87     .036 No_date   28:34   34.35  n/a     .000
           overflow <=    1.0 03:C6-OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.3218E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00127------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:C7             1.62     .171 No_date   28:01   34.35 .755     .000
      [XIMP=.68:TIMP=.85]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 180.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00128------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:C7             1.62     .171 No_date   28:01   34.35  n/a     .000
                out <=    1.0 01:C7-STR         1.62     .031 No_date   28:34   34.35  n/a     .000
           overflow <=    1.0 03:C7-OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.2774E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00129------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:ST-6            .41     .031 No_date   28:00   25.32 .556     .000
      [XIMP=.46:TIMP=.57]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=  91.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00130------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:ST-6            .41     .031 No_date   28:00   25.32  n/a     .000
                out <=    1.0 01:ST6STR          .41     .028 No_date   28:03   25.32  n/a     .000
           overflow <=    1.0 03:ST6OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.7725E-03  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00131------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:PT4ST5       431.02    2.323 No_date   29:07   15.73  n/a     .000
                     +     1.0 02:C6-STR         1.87     .036 No_date   28:34   34.35  n/a     .000
                     +     1.0 02:C6-OVF          .00     .000 No_date    0:00     .00  n/a     .000
                     +     1.0 02:C7-STR         1.62     .031 No_date   28:34   34.35  n/a     .000
                     +     1.0 02:C7-OVF          .00     .000 No_date    0:00     .00  n/a     .000
                     +     1.0 02:ST6STR          .41     .028 No_date   28:03   25.32  n/a     .000
                     +     1.0 02:ST6OVF          .00     .000 No_date    0:00     .00  n/a     .000
                  SUM=     1.0 01:PT5ST6       434.92    2.379 No_date   29:06   15.89  n/a     .000
R0002:C00132------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:PT5ST6       434.92    2.379 No_date   29:06   15.89  n/a     .000
     [RDT= 1.00] out<-    1.0 01:DRAIN4       434.92    2.319 No_date   29:17   15.89  n/a     .000
      [L/S/n=  324./ .100/.043]
      {Vmax=  .532:Dmax= 1.041}
R0002:C00133------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:D4             1.73     .030 No_date   28:36   18.93 .416     .000
      [CN= 88.0: N= 3.00: Tp=  .60]
      [IaREC= 4.00: SMIN= 14.94: SMAX= 99.61: SK= .010]
      [InterEventTime=  12.00]
R0002:C00134------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:Area-B        24.04    2.028 No_date   28:04   31.71 .697     .000
      [XIMP=.62:TIMP=.77]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=1.40:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.40:LGI= 693.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00135------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:Area-B        24.04    2.028 No_date   28:04   31.71  n/a     .000
                out <=    1.0 01:SWMF-B        24.04     .169 No_date   29:09   31.71  n/a     .000
           overflow <=    1.0 03:SWMBOVF         .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.4926E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00136------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:DRAIN4       434.92    2.319 No_date   29:17   15.89  n/a     .000
                     +     1.0 02:D4             1.73     .030 No_date   28:36   18.93  n/a     .000
                     +     1.0 02:SWMF-B        24.04     .169 No_date   29:09   31.71  n/a     .000
                     +     1.0 02:SWMBOVF         .00     .000 No_date    0:00     .00  n/a     .000
                  SUM=     1.0 01:D4-EX        460.69    2.507 No_date   29:17   16.73  n/a     .000
R0002:C00137------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:D4-EX        460.69    2.507 No_date   29:17   16.73  n/a     .000
     [RDT= 1.00] out<-    1.0 01:DRAIN5       460.69    2.448 No_date   29:30   16.73  n/a     .000
      [L/S/n=  413./ .160/.033]
      {Vmax=  .501:Dmax=  .708}
R0002:C00138------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:D5             1.90     .026 No_date   28:43   17.40 .382     .000
      [CN= 86.0: N= 3.00: Tp=  .69]
      [IaREC= 4.00: SMIN= 17.43: SMAX=116.21: SK= .010]
      [InterEventTime=  12.00]
R0002:C00139------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:O-13SDF        9.74     .182 No_date   28:22   16.95 .372     .000
      [CN= 81.0: N= 3.00: Tp=  .43]
      [IaREC= 4.00: SMIN= 25.21: SMAX=168.09: SK= .010]
      [InterEventTime=  12.00]
R0002:C00140------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:O-13SDF        9.74     .182 No_date   28:22   16.95  n/a     .000
                out <=    1.0 01:SDF            9.74     .021 No_date   32:19   16.95  n/a     .000
           overflow <=    1.0 03:OVFSDF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.8320E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00141------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:DRAIN5       460.69    2.448 No_date   29:30   16.73  n/a     .000
                     +     1.0 02:D5             1.90     .026 No_date   28:43   17.40  n/a     .000
                     +     1.0 02:SDF            9.74     .021 No_date   32:19   16.95  n/a     .000
                  SUM=     1.0 01:PT6MC        472.33    2.484 No_date   29:30   16.73  n/a     .000
R0002:C00142------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:O-15          10.67     .230 No_date   28:14   15.77 .347     .000
      [CN= 82.0: N= 3.00: Tp=  .30]
      [IaREC= 4.00: SMIN= 23.09: SMAX=153.94: SK= .010]
      [InterEventTime=  12.00]
R0002:C00143------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:PT6MC        472.33    2.484 No_date   29:30   16.73  n/a     .000
                     +     1.0 02:O-15          10.67     .230 No_date   28:14   15.77  n/a     .000
                  SUM=     1.0 01:M-C          483.00    2.528 No_date   29:29   16.71  n/a     .000
R0002:C00144------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:M-C          483.00    2.528 No_date   29:29   16.71  n/a     .000
     [RDT= 1.00] out<-    1.0 01:O-14Ch       483.00    2.419 No_date   29:44   16.71  n/a     .000
      [L/S/n=  845./ .100/.033]
      {Vmax=  .756:Dmax= 1.160}
R0002:C00145------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:O-14           5.00     .181 No_date   28:04   15.77 .347     .000
      [CN= 82.0: N= 3.00: Tp=  .13]
      [IaREC= 4.00: SMIN= 23.09: SMAX=153.94: SK= .010]
      [InterEventTime=  12.00]
R0002:C00146------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:O-14Ch       483.00    2.419 No_date   29:44   16.71  n/a     .000
                     +     1.0 02:O-14           5.00     .181 No_date   28:04   15.77  n/a     .000
                  SUM=     1.0 01:OKEEFE       488.00    2.434 No_date   29:44   16.70  n/a     .000
#*****************************************************************************
#    Okeefe Pond
#    - Rating curve obtained assuming 40m3/ha in 24 hours for quality control
#      and a ratio of the catchment area to the West Clarke pond rating curve
#      from the MSS for the next coordinates
#*****************************************************************************
R0002:C00147------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-D2        18.67    1.588 No_date   28:02   32.20 .707     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .75:LGI= 353.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0002:C00148------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:S-1-D2        18.67    1.588 No_date   28:02   32.20  n/a     .000
     Major System   /     1.0 02:S-1-D2J         .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:S-1-D2N       18.67    1.588 No_date   28:02   32.20  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00149------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:S-1-D2J         .00     .000 No_date    0:00     .00  n/a     .000
                     +     1.0 02:S-1-D2N       18.67    1.588 No_date   28:02   32.20  n/a     .000
                  SUM=     1.0 01:S-1-D2S       18.67    1.588 No_date   28:02   32.20  n/a     .000
R0002:C00150------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:S-1-D2S       18.67    1.588 No_date   28:02   32.20  n/a     .000
                out <=    1.0 01:S-1-D2R       18.67     .109 No_date   29:25   32.20  n/a     .000
           overflow <=    1.0 03:S-1-D2Rovf      .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.3627E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00151------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-D3         6.79     .628 No_date   28:01   32.20 .707     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .75:LGI= 213.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0002:C00152------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:S-1-D3         6.79     .628 No_date   28:01   32.20  n/a     .000
     Major System   /     1.0 02:S-1-D3J         .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:S-1-D3N        6.79     .628 No_date   28:01   32.20  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00153------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:S-1-D3J         .00     .000 No_date    0:00     .00  n/a     .000
                     +     1.0 02:S-1-D3N        6.79     .628 No_date   28:01   32.20  n/a     .000
                  SUM=     1.0 01:S-1-D3S        6.79     .628 No_date   28:01   32.20  n/a     .000
R0002:C00154------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:S-1-D3S        6.79     .628 No_date   28:01   32.20  n/a     .000
                out <=    1.0 01:S-1-D3R        6.79     .040 No_date   29:20   32.20  n/a     .000
           overflow <=    1.0 03:S-1-D3Rovf      .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.1320E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00155------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:N_OK       53064.36   46.720 No_date   35:24   12.78  n/a     .000
                     +     1.0 02:OKEEFE       488.00    2.434 No_date   29:44   16.70  n/a     .000
                     +     1.0 02:S-1-D2R       18.67     .109 No_date   29:25   32.20  n/a     .000
                     +     1.0 02:S-1-D3R        6.79     .040 No_date   29:20   32.20  n/a     .000
                     +     1.0 02:S-1-D2Rovf      .00     .000 No_date    0:00     .00  n/a     .000
                     +     1.0 02:S-1-D3Rovf      .00     .000 No_date    0:00     .00  n/a     .000
                  SUM=     1.0 01:SN_OK      53577.82   47.629 No_date   34:57   12.82  n/a     .000
R0002:C00156------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD               1.0 01:SN_OK      53577.82   47.629 No_date   34:57   12.82  n/a     .000
      fname :SN_OK.0002
      remark:Total Flows at Okeefe Drain
#
# Hydrograph from Node Okeefe routed to Node at Foster Drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 6215
```

```
#
R0002:C00157------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_OK       53577.82   47.629 No_date   34:57   12.82  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N_FO        53577.82   47.599 No_date   35:11   12.82  n/a     .000
      [L/S/n= 1183./ .076/.035]
      {Vmax=  .919:Dmax= 2.264}
#****************************************************************************
#    Catchment FOSTER
#    - To Foster ditch (north of the Jock)
#    - Partially developed (medium density); remaining agricultural
#    - 2020-12-01 JFSA Foster area is 332 as per Foster SWMF Environmental Study Report, CH2MHILL, Aug 2013.
#    - 2020-12-01 decrease Foster drainage area from (373 HA) to (307.98 HA) after increasing Okeefe drainage area to (5
#    - 2021-02-12  update Foster area to 325.44 ha as measured from QGIS
#****************************************************************************
R0002:C00158------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:FOSTER       325.44   13.697 No_date   28:15   28.56 .628     .000
      [XIMP=.55:TIMP=.55]
      [LOSS= 2 :CN= 74.0]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1473.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 36.67: SMAX=244.49: SK= .010]
#****************************************************************************
#    Foster Pond
#    - Rating curve obtained assuming 40m3/ha in 24 hours for quality control
#      and a ratio of the catchment area to the West Clarke pond rating curve
#      from the MSS for the next coordinates
#****************************************************************************
R0002:C00159------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:FOSTER       325.44   13.697 No_date   28:15   28.56  n/a     .000
                out <=    1.0 01:P_FOS        325.44    3.894 No_date   29:12   28.56  n/a     .000
           overflow <=    1.0 03:FO-OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.3766E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00160------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:P_FOS        325.44    3.894 No_date   29:12   28.56  n/a     .000
                    +     1.0 02:FO-OVF          .00     .000 No_date    0:00     .00  n/a     .000
                 SUM=     1.0 01:FOSTER-OUT   325.44    3.894 No_date   29:12   28.56  n/a     .000
#****************************************************************************
R0002:C00161------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:W_CLAR_BRA    73.29    4.584 No_date   28:07   31.34 .689     .000
      [XIMP=.60:TIMP=.65]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 699.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0002:C00162------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:W_CLAR_BRA    73.29    4.584 No_date   28:07   31.34  n/a     .000
                out <=    1.0 01:MS_P10        73.29    1.033 No_date   28:50   31.34  n/a     .000
           overflow <=    1.0 03:P10-OVF         .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.7493E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00163------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-FO-D2      4.94     .383 No_date   28:01   28.56 .628     .000
      [XIMP=.55:TIMP=.55]
      [LOSS= 2 :CN= 74.0]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 181.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 36.67: SMAX=244.49: SK= .010]
R0002:C00164------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:S-1-FO-D2      4.94     .383 No_date   28:01   28.56  n/a     .000
     Major System   /     1.0 02:S-1-FO-D2J      .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:S-1-FO-D2N     4.94     .383 No_date   28:01   28.56  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00165------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:S-1-FO-D2J      .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:S-1-FO-D2N     4.94     .383 No_date   28:01   28.56  n/a     .000
                 SUM=     1.0 01:S-1-FO-D2S     4.94     .383 No_date   28:01   28.56  n/a     .000
R0002:C00166------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:S-1-FO-D2S     4.94     .383 No_date   28:01   28.56  n/a     .000
                out <=    1.0 01:S-1-FO-D2R     4.94     .025 No_date   29:35   28.56  n/a     .000
           overflow <=    1.0 03:S-1FOD2ovf      .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.8417E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00167------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:FOSTER-OUT   325.44    3.894 No_date   29:12   28.56  n/a     .000
                    +     1.0 02:S-1-FO-D2R     4.94     .025 No_date   29:35   28.56  n/a     .000
                    +     1.0 02:S-1FOD2ovf      .00     .000 No_date    0:00     .00  n/a     .000
                 SUM=     1.0 01:980          330.38    3.919 No_date   29:12   28.56  n/a     .000
R0002:C00168------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:980          330.38    3.919 No_date   29:12   28.56  n/a     .000
      fname :980.0002
      remark:Total Flows at Station 980 on Foster Drain
#
# Hydrograph from Node Foster SWM (Station 980)to Node at station 520
# Channel X-Section obtained from RVCA Hydraulic Model - Station 980
#
R0002:C00169------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:980          330.38    3.919 No_date   29:12   28.56  n/a     .000
     [RDT= 1.00] out<-    1.0 01:980-out      330.38    3.791 No_date   29:25   28.56  n/a     .000
      [L/S/n=  460./ .043/.035]
      {Vmax=  .544:Dmax= 1.092}
R0002:C00170------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-FO-D1      5.11     .460 No_date   28:01   31.98 .703     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 74.0]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 185.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 36.67: SMAX=244.49: SK= .010]
R0002:C00171------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:S-1-FO-D1      5.11     .460 No_date   28:01   31.98  n/a     .000
     Major System   /     1.0 02:S-1-FO-D1J      .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:S-1-FO-D1N     5.11     .460 No_date   28:01   31.98  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00172------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:S-1-FO-D1N     5.11     .460 No_date   28:01   31.98  n/a     .000
                    +     1.0 02:S-1-FO-D1J      .00     .000 No_date    0:00     .00  n/a     .000
                 SUM=     1.0 01:S-1-FO-D1S     5.11     .460 No_date   28:01   31.98  n/a     .000
R0002:C00173------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:S-1-FO-D1S     5.11     .460 No_date   28:01   31.98  n/a     .000
                out <=    1.0 01:S-1-FO-D1R     5.11     .029 No_date   29:30   31.98  n/a     .000
           overflow <=    1.0 03:S-1FOD1ovf      .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.9836E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00174------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:980-out      330.38    3.791 No_date   29:25   28.56  n/a     .000
                    +     1.0 02:S-1-FO-D1R     5.11     .029 No_date   29:30   31.98  n/a     .000
                    +     1.0 02:S-1FOD1ovf      .00     .000 No_date    0:00     .00  n/a     .000
                 SUM=     1.0 01:520          335.49    3.820 No_date   29:25   28.61  n/a     .000
R0002:C00175------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:520          335.49    3.820 No_date   29:25   28.61  n/a     .000
      fname :520.0002
      remark:Total Flows at Sation 520 on Foster Drain
# Hydrograph from Node at Station 520 (Foster Drain) to Node at station 6016 (Jock River)
# Channel X-Section obtained from RVCA Hydraulic Model - Station 520
#
R0002:C00176------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:520          335.49    3.820 No_date   29:25   28.61  n/a     .000
     [RDT= 1.00] out<-    1.0 01:520-out      335.49    3.787 No_date   29:32   28.61  n/a     .000
      [L/S/n=  860./ .587/.035]
      {Vmax= 1.196:Dmax=  .520}
R0002:C00177------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-FO-F-D    14.96    1.215 No_date   28:02   31.98 .703     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 74.0]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 316.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 36.67: SMAX=244.49: SK= .010]
R0002:C00178------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:S-1-FO-F-D    14.96    1.215 No_date   28:02   31.98  n/a     .000
     Major System   /     1.0 02:S-1FO-F-DJ      .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:S-1FO-F-DN    14.96    1.215 No_date   28:02   31.98  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00179------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:S-1FO-F-DJ      .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:S-1FO-F-DN    14.96    1.215 No_date   28:02   31.98  n/a     .000
                 SUM=     1.0 01:S-1FO-F-DS    14.96    1.215 No_date   28:02   31.98  n/a     .000
R0002:C00180------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:S-1FO-F-DS    14.96    1.215 No_date   28:02   31.98  n/a     .000
                out <=    1.0 01:S-1FO-F-DR    14.96     .086 No_date   29:33   31.98  n/a     .000
           overflow <=    1.0 03:S-1FoFDovf      .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.2877E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00181------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-D8         5.27     .475 No_date   28:02   23.32 .512     .000
      [XIMP=.32:TIMP=.65]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI= .75:LGI= 187.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00182------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:S-1-D8         5.27     .475 No_date   28:02   23.32  n/a     .000
     Major System   /     1.0 02:S-1-D8J         .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:S-1-D8N        5.27     .475 No_date   28:02   23.32  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00183------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:S-1-D8J         .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:S-1-D8N        5.27     .475 No_date   28:02   23.32  n/a     .000
                 SUM=     1.0 01:S-1-D8S        5.27     .475 No_date   28:02   23.32  n/a     .000
R0002:C00184------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:S-1-D8S        5.27     .475 No_date   28:02   23.32  n/a     .000
                out <=    1.0 01:S-1-D8R        5.27     .027 No_date   28:51   23.32  n/a     .000
           overflow <=    1.0 03:S-1-D8Rovf      .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.8901E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00185------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:S-1-A         75.88     .912 No_date   28:37   14.83 .326     .000
      [CN= 77.0: N= 3.00: Tp=  .62]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0002:C00186------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:W_CLAR_UND    35.65     .286 No_date   29:12   14.83 .326     .000
      [CN= 77.0: N= 3.00: Tp= 1.10]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0002:C00187------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N_FO       53577.82   47.599 No_date   35:11   12.82  n/a     .000
                    +     1.0 02:520-out      335.49    3.787 No_date   29:32   28.61  n/a     .000
                    +     1.0 02:MS_P10        73.29    1.033 No_date   28:50   31.34  n/a     .000
                    +     1.0 02:P10-OVF         .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:W_CLAR_UND    35.65     .286 No_date   29:12   14.83  n/a     .000
                    +     1.0 02:S-1FoFDovf      .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:S-1FO-F-DR    14.96     .086 No_date   29:33   31.98  n/a     .000
                    +     1.0 02:S-1-D8Rovf      .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:S-1-D8R        5.27     .027 No_date   28:51   23.32  n/a     .000
                    +     1.0 02:S-1-A         75.88     .912 No_date   28:37   14.83  n/a     .000
                 SUM=     1.0 01:SN_FO      54118.36   49.278 No_date   34:33   12.96  n/a     .000
R0002:C00188------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_FO      54118.36   49.278 No_date   34:33   12.96  n/a     .000
      fname :SN_FO.0002
      remark:Total Flows at Foster Drain
# Hydrograph from Node Foster routed to Node at Cedarview Road
# Channel X-Section obtained from RVCA Hydraulic Model - Station 6016
#
R0002:C00189------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_FO      54118.36   49.278 No_date   34:33   12.96  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:N_CE       54118.36   49.269 No_date   34:41   12.96  n/a     .000
      [L/S/n=  159./ .082/.035]
      {Vmax= 1.115:Dmax= 2.629}
#****************************************************************************
#    Catchment S-1
#    - To Jock River (north and south of Jock)
#    - Primarily agricultural fields; portion of sand quarry
#****************************************************************************
R0002:C00190------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:S-1-B         55.36     .825 No_date   28:24   14.83 .326     .000
      [CN= 77.0: N= 3.00: Tp=  .45]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
#    -  JFSA 2021-02-24 change the name from S-1-BCDC to S-1-A and S-1-B. Change their TP values based on the new areas
#    -  JFSA 2021-02-24 "S-1-BCDC-1" and "S-1-BCDC-2" are not existing anymore. "S-1-BCDC-1" is part of "S-1-FO-D2" and
#    -  JFSA 2021-01-19, after adding Greenbank pond, "S-1-BCDC-3" is not existing anymore
R0002:C00191------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-D1        21.67    1.802 No_date   28:02   32.20 .707     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .75:LGI= 380.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0002:C00192------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:S-1-D1        21.67    1.802 No_date   28:02   32.20  n/a     .000
     Major System   /     1.0 02:S-1-D1J         .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:S-1-D1N       21.67    1.802 No_date   28:02   32.20  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00193------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:S-1-D1J         .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:S-1-D1N       21.67    1.802 No_date   28:02   32.20  n/a     .000
                 SUM=     1.0 01:S-1-D1S       21.67    1.802 No_date   28:02   32.20  n/a     .000
R0002:C00194------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:S-1-D1S       21.67    1.802 No_date   28:02   32.20  n/a     .000
                out <=    1.0 01:S-1-D1R       21.67     .126 No_date   29:27   32.20  n/a     .000
           overflow <=    1.0 03:S-1-D1Rovf      .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.4209E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00195------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-D4         3.28     .322 No_date   28:00   32.20 .707     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .75:LGI= 148.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0002:C00196------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:S-1-D4         3.28     .322 No_date   28:00   32.20  n/a     .000
     Major System   /     1.0 02:S-1-D4J         .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:S-1-D4N        3.28     .322 No_date   28:00   32.20  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00197------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:S-1-D4J         .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:S-1-D4N        3.28     .322 No_date   28:00   32.20  n/a     .000
                 SUM=     1.0 01:S-1-D4S        3.28     .322 No_date   28:00   32.20  n/a     .000
R0002:C00198------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:S-1-D4S        3.28     .322 No_date   28:00   32.20  n/a     .000
                out <=    1.0 01:S-1-D4R        3.28     .019 No_date   29:16   32.20  n/a     .000
           overflow <=    1.0 03:S-1-D4Rovf      .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.6378E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00199------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-D5        12.84    1.124 No_date   28:02   32.20 .707     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .75:LGI= 293.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0002:C00200------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:S-1-D5        12.84    1.124 No_date   28:02   32.20  n/a     .000
     Major System   /     1.0 02:S-1-D5J         .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:S-1-D5N       12.84    1.124 No_date   28:02   32.20  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00201------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:S-1-D5J         .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:S-1-D5N       12.84    1.124 No_date   28:02   32.20  n/a     .000
                 SUM=     1.0 01:S-1-D5S       12.84    1.124 No_date   28:02   32.20  n/a     .000
R0002:C00202------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:S-1-D5S       12.84    1.124 No_date   28:02   32.20  n/a     .000
                out <=    1.0 01:S-1-D5R       12.84     .075 No_date   29:23   32.20  n/a     .000
           overflow <=    1.0 03:S-1-D5Rovf      .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.2495E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00203------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-D6         1.75     .176 No_date   28:00   32.20 .707     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .75:LGI= 108.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0002:C00204------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:S-1-D6         1.75     .176 No_date   28:00   32.20  n/a     .000
     Major System   /     1.0 02:S-1-D6J         .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:S-1-D6N        1.75     .176 No_date   28:00   32.20  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00205------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:S-1-D6J         .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:S-1-D6N        1.75     .176 No_date   28:00   32.20  n/a     .000
                 SUM=     1.0 01:S-1-D6S        1.75     .176 No_date   28:00   32.20  n/a     .000
R0002:C00206------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:S-1-D6S        1.75     .176 No_date   28:00   32.20  n/a     .000
                out <=    1.0 01:S-1-D6R        1.75     .010 No_date   29:14   32.20  n/a     .000
           overflow <=    1.0 03:S-1-D6Rovf      .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.3405E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00207------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-D7         2.03     .204 No_date   28:00   32.20 .707     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .75:LGI= 116.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0002:C00208------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:S-1-D7         2.03     .204 No_date   28:00   32.20  n/a     .000
     Major System   /     1.0 02:S-1-D7J         .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:S-1-D7N        2.03     .204 No_date   28:00   32.20  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00209------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:S-1-D7J         .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:S-1-D7N        2.03     .204 No_date   28:00   32.20  n/a     .000
                 SUM=     1.0 01:S-1-D7S        2.03     .204 No_date   28:00   32.20  n/a     .000
R0002:C00210------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:S-1-D7S        2.03     .204 No_date   28:00   32.20  n/a     .000
                out <=    1.0 01:S-1-D7R        2.03     .012 No_date   29:15   32.20  n/a     .000
           overflow <=    1.0 03:S-1-D7Rovf      .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.3948E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
#    Catchment W_CLAR
#    - To West Clarke Drain (south of the Jock)
#    - Subdivision with 43% imp. as per Barrhaven South MSS
#    - 2020-11-30 update CLARKE Tributary Drainage Area to  = 121 ha based on P598(04)-11
#    - 2020-11-30 split CLARKE Drainage Area to MAJOR and ALL
#****************************************************************************
R0002:C00211------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:W_CLAR_MJ      1.77     .141 No_date   28:00   27.78 .610     .000
      [XIMP=.46:TIMP=.59]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 109.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
# 5-Year + 12% Capture
R0002:C00212------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:W_CLAR_MJ      1.77     .141 No_date   28:00   27.78  n/a     .000
                out <=    1.0 01:W_CLAR_MJn     1.77     .141 No_date   28:00   27.78  n/a     .000
           overflow <=    1.0 03:W_CLAR_MJj      .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.6675E-04  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00213------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:W_CLAR_ALL   119.40    7.746 No_date   28:06   31.34 .689     .000
      [XIMP=.60:TIMP=.65]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 892.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0002:C00214------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:W_CLAR_ALL   119.40    7.746 No_date   28:06   31.34  n/a     .000
                    +     1.0 02:W_CLAR_MJj      .00     .000 No_date    0:00     .00  n/a     .000
                 SUM=     1.0 01:W_CLAR       119.40    7.746 No_date   28:06   31.34  n/a     .000
R0002:C00215------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:W_CLAR       119.40    7.746 No_date   28:06   31.34  n/a     .000
      fname :W_CLAR.0002
      remark:Total Flows to West Clarke
#****************************************************************************
#    West Clarke Pond 2
#    - Rating curve obtained from Barrhaven South MSS modeling
#    - Tributary Drainage Area to MSS Pond 2 = 241 ha
#****************************************************************************
R0002:C00216------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:W_CLAR       119.40    7.746 No_date   28:06   31.34  n/a     .000
                out <=    1.0 01:MS_P2        119.40     .816 No_date   29:25   31.34  n/a     .000
```

```
           overflow <=    1.0 03:P2-OVF          .00     .000 No_date    0:00     .00  n/a     .000
      {MxStoUsed=.2096E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
#****************************************************************************
R0002:C00217------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                 1.0 02:N_CE      54118.36   49.269 No_date   34:41   12.96  n/a     .000
                     +      1.0 02:S-1-D4R       3.28     .019 No_date   29:16   32.20  n/a     .000
                     +      1.0 02:S-1-D5R      12.84     .075 No_date   29:23   32.20  n/a     .000
                     +      1.0 02:S-1-D4Rovf     .00     .000 No_date    0:00     .00  n/a     .000
                     +      1.0 02:S-1-D5Rovf     .00     .000 No_date    0:00     .00  n/a     .000
                     +      1.0 02:MS_P2       119.40     .816 No_date   29:25   31.34  n/a     .000
                     +      1.0 02:P2-OVF         .00     .000 No_date    0:00     .00  n/a     .000
                  SUM=      1.0 01:SN_CE     54253.88   49.833 No_date   34:41   13.00  n/a     .000
R0002:C00218------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD                1.0 01:SN_CE     54253.88   49.833 No_date   34:41   13.00  n/a     .000
      fname :SN_CE.0002
      remark:Total Flows before Station 5737 on Jock River
# Channel X-Section obtained from RVCA Hydraulic Model - Station 5737
# 2021-02-25 add station 5737 before station 5002. Station 5737 was extracted from the HEC-RAS model T:\PROJ\1474-16\Des
# JFSA 2021-03-02  change the slope to 0.0175% instead of 0.02593 to stabilize the model
R0002:C00219------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->      1.0 02:SN_CE     54253.88   49.833 No_date   34:41   13.00  n/a     .000
 *   [RDT= 1.00] out<-      1.0 01:5737      54253.88   48.535 No_date   37:45   13.00  n/a     .000
      [L/S/n=  270./ .018/.035]
      {Vmax=  .611:Dmax= 3.459}
R0002:C00220------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                 1.0 02:5737      54253.88   48.535 No_date   37:45   13.00  n/a     .000
                     +      1.0 02:S-1-D1R      21.67     .126 No_date   29:27   32.20  n/a     .000
                     +      1.0 02:S-1-D6R       1.75     .010 No_date   29:14   32.20  n/a     .000
                     +      1.0 02:S-1-D7R       2.03     .012 No_date   29:15   32.20  n/a     .000
                     +      1.0 02:S-1-D1Rovf     .00     .000 No_date    0:00     .00  n/a     .000
                     +      1.0 02:S-1-D6Rovf     .00     .000 No_date    0:00     .00  n/a     .000
                     +      1.0 02:S-1-D7Rovf     .00     .000 No_date    0:00     .00  n/a     .000
                  SUM=      1.0 01:5002      54279.33   48.627 No_date   37:44   13.01  n/a     .000
R0002:C00221------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD                1.0 01:5002      54279.33   48.627 No_date   37:44   13.01  n/a     .000
      fname :5002.0002
      remark:Total Flows before Station 5002 on Jock River
# Hydrograph from Node Cedarview Road routed to Node at West Clarke Drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 5002
# JFSA 2021-02-19 Change the slope from 0.01 % (as per Stantec Report 2007) to 0.0255 % so the model will be more stable
# JFSA 2021-02-19 Change to three ROUTE CHANNEL with length 275 m each instead of one with 825 m length so the model wil
# JFSA 2021-02-26 change the length of 5002 route channel from 825 m to 736 m. That is because of adding station 5737 be
R0002:C00222------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->      1.0 02:5002      54279.33   48.627 No_date   37:44   13.01  n/a     .000
     [RDT= 1.00] out<-      1.0 01:N_WCa     54279.33   48.684 No_date   37:20   13.01  n/a     .000
      [L/S/n=  245./ .095/.035]
      {Vmax=  .960:Dmax= 2.010}
R0002:C00223------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->      1.0 02:N_WCa     54279.33   48.684 No_date   37:20   13.01  n/a     .000
     [RDT= 1.00] out<-      1.0 01:N_WCb     54279.33   48.709 No_date   37:36   13.01  n/a     .000
      [L/S/n=  245./ .095/.035]
      {Vmax=  .961:Dmax= 2.011}
R0002:C00224------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->      1.0 02:N_WCb     54279.33   48.709 No_date   37:36   13.01  n/a     .000
     [RDT= 1.00] out<-      1.0 01:N_WC      54279.33   48.660 No_date   36:26   13.01  n/a     .000
      [L/S/n=  245./ .095/.035]
      {Vmax=  .961:Dmax= 2.011}
#****************************************************************************
# Hydrograph from Node West Clarke routed to Node at Kennedy - Burnett Drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 4534
#
R0002:C00225------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->      1.0 02:N_WC      54279.33   48.660 No_date   36:26   13.01  n/a     .000
     [RDT= 1.00] out<-      1.0 01:N_KB      54279.33   48.613 No_date   37:48   13.01  n/a     .000
      [L/S/n= 1020./ .050/.035]
      {Vmax=  .848:Dmax= 2.423}
#****************************************************************************
#    Catchment KEN_BU
#    - To Kennedy-Burnett SWM Facility
#    - Outlets to Fraser-Clarke drain (north of the Jock)
#    - Medium density residential subdivision
#****************************************************************************
#****************************************************************************
#   Existing Kennedy-Burnett SWM Facility
#    - Rating curve obtained from URTKBP
#    - Tributary Drainage Area to Pond = 160 ha
#****************************************************************************
R0002:C00226------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-01A        40.82    1.627 No_date   28:18   14.35 .315     .000
      [XIMP=.10:TIMP=.40]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI= .50:LGI= 522.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00227------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-01A        40.82    1.627 No_date   28:18   14.35  n/a     .000
     Major System   /     1.0 02:KB-01A-MJ       .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-01A-MN     40.82    1.627 No_date   28:18   14.35  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00228------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                 1.0 02:KB-01A-MJ       .00     .000 No_date    0:00     .00  n/a     .000
                     +      1.0 02:KB-01A-MN     40.82    1.627 No_date   28:18   14.35  n/a     .000
                  SUM=      1.0 01:KB-01A-S      40.82    1.627 No_date   28:18   14.35  n/a     .000
R0002:C00229------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-01B        31.10    1.062 No_date   28:08   16.28 .358     .000
      [XIMP=.19:TIMP=.38]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .42:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI= .42:LGI= 455.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00230------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-01B        31.10    1.062 No_date   28:08   16.28  n/a     .000
     Major System   /     1.0 02:KB-01B-MJ       .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-01B-MN     31.10    1.062 No_date   28:08   16.28  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00231------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                 1.0 02:KB-01B-MJ       .00     .000 No_date    0:00     .00  n/a     .000
                     +      1.0 02:KB-01B-MN     31.10    1.062 No_date   28:08   16.28  n/a     .000
                  SUM=      1.0 01:KB-01B-S      31.10    1.062 No_date   28:08   16.28  n/a     .000
R0002:C00232------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-01C        13.78     .776 No_date   28:06   17.09 .375     .000
      [XIMP=.20:TIMP=.41]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI= .50:LGI= 303.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00233------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-01C        13.78     .776 No_date   28:06   17.09  n/a     .000
     Major System   /     1.0 02:KB-01C-MJ       .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-01C-MN     13.78     .776 No_date   28:06   17.09  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00234------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                 1.0 02:KB-01C-MJ       .00     .000 No_date    0:00     .00  n/a     .000
                     +      1.0 02:KB-01C-MN     13.78     .776 No_date   28:06   17.09  n/a     .000
                  SUM=      1.0 01:KB-01C-S      13.78     .776 No_date   28:06   17.09  n/a     .000
R0002:C00235------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-03         84.78    3.788 No_date   28:12   16.73 .368     .000
      [XIMP=.20:TIMP=.39]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI= .63:LGI= 752.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00236------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-03         84.78    3.788 No_date   28:12   16.73  n/a     .000
     Major System   /     1.0 02:KB-03-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-03-MN      84.78    3.788 No_date   28:12   16.73  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00237------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                 1.0 02:KB-03-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                     +      1.0 02:KB-03-MN      84.78    3.788 No_date   28:12   16.73  n/a     .000
                  SUM=      1.0 01:KB-03-S       84.78    3.788 No_date   28:12   16.73  n/a     .000
R0002:C00238------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-04          6.95     .792 No_date   28:01   38.80 .853     .000
      [XIMP=.85:TIMP=.85]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .94:SLPI= .50:LGI= 215.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00239------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-04          6.95     .792 No_date   28:01   38.80  n/a     .000
     Major System   /     1.0 02:KB-04-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-04-MN       6.95     .503 No_date   27:53   39.02  n/a     .000
      {MjSysSto=.1541E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00240------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                 1.0 02:KB-04-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                     +      1.0 02:KB-04-MN       6.95     .503 No_date   27:53   39.02  n/a     .000
                  SUM=      1.0 01:KB-04-S        6.95     .503 No_date   27:53   39.02  n/a     .000
R0002:C00241------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-05          5.19     .653 No_date   28:01   41.29 .907     .000
      [XIMP=.93:TIMP=.93]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 186.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00242------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-06         12.93    1.683 No_date   28:00   39.68 .872     .000
      [XIMP=.87:TIMP=.87]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .94:SLPI=4.75:LGI= 294.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00243------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-06         12.93    1.683 No_date   28:00   39.68  n/a     .000
     Major System   /     1.0 02:KB-06-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-06-MN      12.93    1.683 No_date   28:00   39.68  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00244------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                 1.0 02:KB-06-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                     +      1.0 02:KB-06-MN      12.93    1.683 No_date   28:00   39.68  n/a     .000
                  SUM=      1.0 01:KB-06-S       12.93    1.683 No_date   28:00   39.68  n/a     .000
R0002:C00245------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-11          4.03     .425 No_date   28:00   32.17 .707     .000
      [XIMP=.68:TIMP=.68]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI=2.00:LGI= 164.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00246------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-11          4.03     .425 No_date   28:00   32.17  n/a     .000
     Major System   /     1.0 02:KB-11-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-11-MN       4.03     .425 No_date   28:00   32.17  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00247------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                 1.0 02:KB-11-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                     +      1.0 02:KB-11-MN       4.03     .425 No_date   28:00   32.17  n/a     .000
                  SUM=      1.0 01:KB-11-S        4.03     .425 No_date   28:00   32.17  n/a     .000
R0002:C00248------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S1             4.99     .689 No_date   28:00   41.29 .907     .000
      [XIMP=.93:TIMP=.93]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=2.00:LGI= 182.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00249------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-15          2.15     .241 No_date   28:00   37.11 .815     .000
      [XIMP=.79:TIMP=.79]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .16:SLPI= .30:LGI= 120.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00250------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                 1.0 02:KB-01A-S      40.82    1.627 No_date   28:18   14.35  n/a     .000
                     +      1.0 02:KB-01B-S      31.10    1.062 No_date   28:08   16.28  n/a     .000
                     +      1.0 02:KB-01C-S      13.78     .776 No_date   28:06   17.09  n/a     .000
                     +      1.0 02:KB-03-S       84.78    3.788 No_date   28:12   16.73  n/a     .000
                     +      1.0 02:KB-04-S        6.95     .503 No_date   27:53   39.02  n/a     .000
                     +      1.0 02:KB-05          5.19     .653 No_date   28:01   41.29  n/a     .000
                     +      1.0 02:KB-06-S       12.93    1.683 No_date   28:00   39.68  n/a     .000
                     +      1.0 02:KB-11-S        4.03     .425 No_date   28:00   32.17  n/a     .000
                     +      1.0 02:KB-15          2.15     .241 No_date   28:00   37.11  n/a     .000
                     +      1.0 02:S1             4.99     .689 No_date   28:00   41.29  n/a     .000
                  SUM=      1.0 01:KB-P1        206.72    9.491 No_date   28:02   20.13  n/a     .000
R0002:C00251------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->      1.0 02:KB-P1        206.72    9.491 No_date   28:02   20.13  n/a     .000
                out <=      1.0 01:KB-P1R       206.72    8.405 No_date   28:13   20.13  n/a     .000
           overflow <=      1.0 03:KB-P1ovf        .00     .000 No_date    0:00     .00  n/a     .000
      {MxStoUsed=.3779E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00252------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                 1.0 02:KB-P1R       206.72    8.405 No_date   28:13   20.13  n/a     .000
                     +      1.0 02:KB-P1ovf        .00     .000 No_date    0:00     .00  n/a     .000
                  SUM=      1.0 01:KB-Pond1     206.72    8.405 No_date   28:13   20.13  n/a     .000
R0002:C00253------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD                1.0 01:KB-Pond1     206.72    8.405 No_date   28:13   20.13  n/a     .000
      fname :KB-Pond1.0002
      remark:Total Flows at KB first pond
R0002:C00254------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-07         10.86    1.337 No_date   28:00   39.32 .864     .000
      [XIMP=.86:TIMP=.86]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI=2.00:LGI= 269.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00255------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-07         10.86    1.337 No_date   28:00   39.32  n/a     .000
     Major System   /     1.0 02:KB-07-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-07-MN      10.86    1.337 No_date   28:00   39.32  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00256------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                 1.0 02:KB-07-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                     +      1.0 02:KB-07-MN      10.86    1.337 No_date   28:00   39.32  n/a     .000
                  SUM=      1.0 01:KB-07-S       10.86    1.337 No_date   28:00   39.32  n/a     .000
R0002:C00257------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-08          6.61     .651 No_date   28:00   30.82 .677     .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI=2.00:LGI= 210.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00258------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-08          6.61     .651 No_date   28:00   30.82  n/a     .000
     Major System   /     1.0 02:KB-08-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-08-MN       6.61     .651 No_date   28:00   30.82  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00259------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                 1.0 02:KB-08-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                     +      1.0 02:KB-08-MN       6.61     .651 No_date   28:00   30.82  n/a     .000
                  SUM=      1.0 01:KB-08-S        6.61     .651 No_date   28:00   30.82  n/a     .000
R0002:C00260------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-09          2.60     .344 No_date   28:00   38.64 .849     .000
      [XIMP=.86:TIMP=.86]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=2.00:LGI= 132.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00261------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-10_1        2.37     .314 No_date   28:00   38.64 .849     .000
      [XIMP=.86:TIMP=.86]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=2.00:LGI= 126.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00262------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-10_2        1.14     .153 No_date   28:00   38.64 .849     .000
      [XIMP=.86:TIMP=.86]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=2.00:LGI=  87.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00263------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-12          4.86     .581 No_date   28:00   36.37 .799     .000
      [XIMP=.79:TIMP=.79]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.10:SLPI=2.00:LGI= 180.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00264------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-12          4.86     .581 No_date   28:00   36.37  n/a     .000
     Major System   /     1.0 02:KB-12-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-12-MN       4.86     .581 No_date   28:00   36.37  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00265------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                 1.0 02:KB-12-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                     +      1.0 02:KB-12-MN       4.86     .581 No_date   28:00   36.37  n/a     .000
                  SUM=      1.0 01:KB-12-S        4.86     .581 No_date   28:00   36.37  n/a     .000
R0002:C00266------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-13         10.19     .970 No_date   28:00   30.82 .677     .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI=2.00:LGI= 261.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00267------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-13         10.19     .970 No_date   28:00   30.82  n/a     .000
     Major System   /     1.0 02:KB-13-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-13-MN      10.19     .970 No_date   28:00   30.82  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00268------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                 1.0 02:KB-13-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                     +      1.0 02:KB-13-MN      10.19     .970 No_date   28:00   30.82  n/a     .000
                  SUM=      1.0 01:KB-13-S       10.19     .970 No_date   28:00   30.82  n/a     .000
R0002:C00269------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-14          5.47     .543 No_date   28:00   30.82 .677     .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI=2.00:LGI= 191.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00270------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-14          5.47     .543 No_date   28:00   30.82  n/a     .000
     Major System   /     1.0 02:KB-14-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-14-MN       5.47     .543 No_date   28:00   30.82  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00271------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                 1.0 02:KB-14-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                     +      1.0 02:KB-14-MN       5.47     .543 No_date   28:00   30.82  n/a     .000
                  SUM=      1.0 01:KB-14-S        5.47     .543 No_date   28:00   30.82  n/a     .000
R0002:C00272------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-16_2        3.42     .337 No_date   28:01   33.97 .746     .000
      [XIMP=.71:TIMP=.71]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .16:SLPI= .30:LGI= 151.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00273------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                 1.0 02:KB-Pond1     206.72    8.405 No_date   28:13   20.13  n/a     .000
                     +      1.0 02:KB-07-S       10.86    1.337 No_date   28:00   39.32  n/a     .000
                     +      1.0 02:KB-08-S        6.61     .651 No_date   28:00   30.82  n/a     .000
                     +      1.0 02:KB-09          2.60     .344 No_date   28:00   38.64  n/a     .000
                     +      1.0 02:KB-10_1        2.37     .314 No_date   28:00   38.64  n/a     .000
                     +      1.0 02:KB-10_2        1.14     .153 No_date   28:00   38.64  n/a     .000
                     +      1.0 02:KB-12-S        4.86     .581 No_date   28:00   36.37  n/a     .000
                     +      1.0 02:KB-13-S       10.19     .970 No_date   28:00   30.82  n/a     .000
                     +      1.0 02:KB-14-S        5.47     .543 No_date   28:00   30.82  n/a     .000
                     +      1.0 02:KB-16_2        3.42     .337 No_date   28:01   33.97  n/a     .000
                  SUM=      1.0 01:KB-P2        254.24   11.772 No_date   28:02   22.82  n/a     .000
R0002:C00274------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->      1.0 02:KB-P2        254.24   11.772 No_date   28:02   22.82  n/a     .000
                out <=      1.0 01:KB-P2R       254.24    9.930 No_date   28:12   22.82  n/a     .000
           overflow <=      1.0 03:KB-P2ovf        .00     .000 No_date    0:00     .00  n/a     .000
      {MxStoUsed=.4507E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00275------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                 1.0 02:KB-P2R       254.24    9.930 No_date   28:12   22.82  n/a     .000
                     +      1.0 02:KB-P2ovf        .00     .000 No_date    0:00     .00  n/a     .000
                  SUM=      1.0 01:KB-Pond2     254.24    9.930 No_date   28:12   22.82  n/a     .000
R0002:C00276------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD                1.0 01:KB-Pond2     254.24    9.930 No_date   28:12   22.82  n/a     .000
      fname :KB-Pond2.0002
      remark:Total Flows at KB second pond
R0002:C00277------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-16_1        2.80     .293 No_date   28:01   35.54 .781     .000
      [XIMP=.75:TIMP=.75]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .16:SLPI= .30:LGI= 137.:MNI=.013:SCI=   .0]
```

```
      [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00278-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-Pond2     254.24    9.930 No_date   28:12   22.82  n/a     .000
                     +    1.0 02:KB-16_1        2.80     .293 No_date   28:01   35.54  n/a     .000
                  SUM=    1.0 01:KB-P3        257.04   10.049 No_date   28:11   22.96  n/a     .000
R0002:C00279-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:KB-P3        257.04   10.049 No_date   28:11   22.96  n/a     .000
                out <=    1.0 01:KB-P3R        18.54     .051 No_date   18:09   22.96  n/a     .000
           overflow <=    1.0 03:KB-P3ovf     238.50    9.997 No_date   28:11   22.96  n/a     .000
     {MxStoUsed=.2001E-02  m3, TotOvfVol=.5477E+01  m3, N-Ovf=    1, TotDurOvf=   22.hrs}
R0002:C00280-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-P3R        18.54     .051 No_date   18:09   22.96  n/a     .000
                     +    1.0 02:KB-P3ovf     238.50    9.997 No_date   28:11   22.96  n/a     .000
                  SUM=    1.0 01:KB-Pond3     257.04   10.048 No_date   28:11   22.96  n/a     .000
R0002:C00281-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:KB-Pond3     257.04   10.048 No_date   28:11   22.96  n/a     .000
      fname :KB-Pond3.0002
      remark:Total Flows at KB third pond
#***************************************************************************
#    EXISTING / PROPOSED Subcatchments (Kennedy-Burnett SWM Facility (118080), SWM Modeling Approach, NOVATECH Report Ju
#    - TO FRASER-CLARKE DRAIN
#***************************************************************************
R0002:C00282-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:FC-01          8.03     .575 No_date   28:01   23.89 .525     .000
      [XIMP=.47:TIMP=.47]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 231.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00283-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:FC-01          8.03     .575 No_date   28:01   23.89  n/a     .000
     Major System   /     1.0 02:FC-01-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:FC-01-MN       8.03     .575 No_date   28:01   23.89  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00284-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:FC-01-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                     +    1.0 02:FC-01-MN       8.03     .575 No_date   28:01   23.89  n/a     .000
                  SUM=    1.0 01:FC-01-S        8.03     .575 No_date   28:01   23.89  n/a     .000
R0002:C00285-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:FC-02         16.05    1.936 No_date   28:01   41.29 .907     .000
      [XIMP=.93:TIMP=.93]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 327.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00286-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:FC-02         16.05    1.936 No_date   28:01   41.29  n/a     .000
     Major System   /     1.0 02:FC-02-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:FC-02-MN      16.05    1.159 No_date   27:52   41.31  n/a     .000
      {MjSysSto=.4641E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00287-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:FC-02-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                     +    1.0 02:FC-02-MN      16.05    1.159 No_date   27:52   41.31  n/a     .000
                  SUM=    1.0 01:FC-02-S       16.05    1.159 No_date   27:52   41.31  n/a     .000
R0002:C00288-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:FC-03          7.37     .687 No_date   28:01   30.32 .666     .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 222.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00289-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:FC-03          7.37     .687 No_date   28:01   30.32  n/a     .000
     Major System   /     1.0 02:FC-03-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:FC-03-MN       7.37     .358 No_date   27:49   30.49  n/a     .000
      {MjSysSto=.2043E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00290-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:FC-03-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                     +    1.0 02:FC-03-MN       7.37     .358 No_date   27:49   30.49  n/a     .000
                  SUM=    1.0 01:FC-03-S        7.37     .358 No_date   27:49   30.49  n/a     .000
R0002:C00291-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:FC-04         12.87    1.148 No_date   28:01   30.32 .666     .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 293.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00292-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:FC-04         12.87    1.148 No_date   28:01   30.32  n/a     .000
     Major System   /     1.0 02:FC-04-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:FC-04-MN      12.87     .741 No_date   27:53   30.44  n/a     .000
      {MjSysSto=.2134E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00293-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:FC-04-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                     +    1.0 02:FC-04-MN      12.87     .741 No_date   27:53   30.44  n/a     .000
                  SUM=    1.0 01:FC-04-S       12.87     .741 No_date   27:53   30.44  n/a     .000
#***************************************************************************
#    PROPOSED Subcatchments (Kennedy-Burnett SWM Facility (118080), SWM Modeling Approach, NOVATECH Report June, 2020)
#    - TO JOCK RIVER
#***************************************************************************
R0002:C00294-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:JR-01          8.24     .764 No_date   28:01   30.32 .666     .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 234.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00295-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:JR-01          8.24     .764 No_date   28:01   30.32  n/a     .000
     Major System   /     1.0 02:JR-01-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:JR-01-MN       8.24     .563 No_date   28:13   30.43  n/a     .000
      {MjSysSto=.8257E+02, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00296-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:JR-01-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                     +    1.0 02:JR-01-MN       8.24     .563 No_date   27:55   30.43  n/a     .000
                  SUM=    1.0 01:JR-01-S        8.24     .563 No_date   27:55   30.43  n/a     .000
R0002:C00297-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:JR-02          1.59     .162 No_date   28:00   30.32 .666     .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 103.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0002:C00298-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:JR-02          1.59     .162 No_date   28:00   30.32  n/a     .000
     Major System   /     1.0 02:JR-02-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:JR-02-MN       1.59     .153 No_date   27:58   30.45  n/a     .000
      {MjSysSto=.1236E+01, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00299-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:JR-02-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                     +    1.0 02:JR-02-MN       1.59     .153 No_date   27:58   30.45  n/a     .000
                  SUM=    1.0 01:JR-02-S        1.59     .153 No_date   27:58   30.45  n/a     .000
#***************************************************************************
#    Catchment FRASER
#    - To Fraser-Clarke drain (north of the Jock)
#    - Developed land with assumed 43% imp.
#    - 2020-12-17 Change Fraser area to be 35.1 as measured from QGIS
#    - 2020-12-17 All Fraser is undeveloped (Nashyd)
#***************************************************************************
R0002:C00300-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:FRASER-DRN    13.65     .212 No_date   28:22   14.83 .326     .000
      [CN= 77.0: N= 3.00: Tp=  .43]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0002:C00301-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:FRASER-D      21.61    1.710 No_date   28:02   30.87 .678     .000
      [XIMP=.58:TIMP=.58]
      [LOSS= 2 :CN= 80.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 380.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 26.32: SMAX=175.50: SK= .010]
R0002:C00302-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:FRASER-D      21.61    1.710 No_date   28:02   30.87  n/a     .000
     Major System   /     1.0 02:FRASER-J        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:FRASER-N      21.61    1.710 No_date   28:02   30.87  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00303-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:FRASER-J        .00     .000 No_date    0:00     .00  n/a     .000
                     +    1.0 02:FRASER-N      21.61    1.710 No_date   28:02   30.87  n/a     .000
                  SUM=    1.0 01:FRASER-S      21.61    1.710 No_date   28:02   30.87  n/a     .000
R0002:C00304-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-Pond3     257.04   10.048 No_date   28:11   22.96  n/a     .000
                     +    1.0 02:S-1-B         55.36     .825 No_date   28:24   14.83  n/a     .000
                     +    1.0 02:FRASER-DRN    13.65     .212 No_date   28:22   14.83  n/a     .000
                     +    1.0 02:FRASER-S      21.61    1.710 No_date   28:02   30.87  n/a     .000
                     +    1.0 02:N_KB       54279.33   48.613 No_date   37:48   13.01  n/a     .000
                     +    1.0 02:FC-01-S        8.03     .575 No_date   28:01   23.89  n/a     .000
                     +    1.0 02:FC-02-S       16.05    1.159 No_date   27:52   41.31  n/a     .000
                     +    1.0 02:FC-03-S        7.37     .358 No_date   27:49   30.49  n/a     .000
                  SUM=    1.0 01:4241       54658.44   48.897 No_date   37:48   13.08  n/a     .000
R0002:C00305-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:4241       54658.44   48.897 No_date   37:48   13.08  n/a     .000
      fname :4241.0002
      remark:Total Flows at Ken-Burnett Outlet
# Hydrograph from Node Ken-Burnett to station 3633
# Channel X-Section obtained from RVCA Hydraulic Model - Station 4241
#
R0002:C00306-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:4241       54658.44   48.897 No_date   37:48   13.08  n/a     .000
     [RDT= 1.00] out<-    1.0 01:4241-out   54658.44   48.922 No_date   37:46   13.08  n/a     .000
      [L/S/n=  294./ .109/.035]
      {Vmax=  .961:Dmax= 1.544}
R0002:C00307-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:4241-out   54658.44   48.922 No_date   37:46   13.08  n/a     .000
                     +    1.0 02:FC-04-S       12.87     .741 No_date   27:53   30.44  n/a     .000
                     +    1.0 02:JR-01-S        8.24     .563 No_date   27:55   30.43  n/a     .000
                     +    1.0 02:JR-02-S        1.59     .153 No_date   27:58   30.45  n/a     .000
                  SUM=    1.0 01:SN_KB      54681.13   48.944 No_date   37:46   13.09  n/a     .000
R0002:C00308-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_KB      54681.13   48.944 No_date   37:46   13.09  n/a     .000
      fname :SN_KB.0002
      remark:Total Flows before Station 3633
# Hydrograph from Station 3633 to Node Todd
# Channel X-Section obtained from RVCA Hydraulic Model - Station 3633
# JFSA 2021-02-26 change the channel length (at station 3633) from 650m to 608m and change the slope from 0.0498% to 0.2
#
R0002:C00309-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_KB      54681.13   48.944 No_date   37:46   13.09  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N_TO       54681.13   48.905 No_date   37:53   13.09  n/a     .000
      [L/S/n=  608./ .247/.035]
      {Vmax= 1.299:Dmax= 1.136}
#***************************************************************************
#    Catchment Greenbank
#    - To Greenbank Drain (south of the Jock)
#    - JFSA 2021-01-18 add Greenbank pond as per JFSA, P598(06)-15, June 2016
#    - JFSA 2021-01-19 update area from 37.479 ha to 36.6 ha based on GIS measurements
#***************************************************************************
R0002:C00310-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:Greenbank     36.60    2.954 No_date   28:02   32.54 .715     .000
      [XIMP=.64:TIMP=.68]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 494.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0002:C00311-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:Greenbank     36.60    2.954 No_date   28:02   32.54  n/a     .000
                out <=    1.0 01:GreenB_MN     36.60     .569 No_date   28:38   32.54  n/a     .000
           overflow <=    1.0 03:GreenB_MJ       .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.6052E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00312-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N_TO       54681.13   48.905 No_date   37:53   13.09  n/a     .000
                     +    1.0 02:GreenB_MJ       .00     .000 No_date    0:00     .00  n/a     .000
                     +    1.0 02:GreenB_MN     36.60     .569 No_date   28:38   32.54  n/a     .000
                  SUM=    1.0 01:GreenB     54717.73   48.982 No_date   37:53   13.10  n/a     .000
R0002:C00313-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:GreenB     54717.73   48.982 No_date   37:53   13.10  n/a     .000
      fname :GreenB.0002
      remark:Total Flows at Greenbank Drain
#***************************************************************************
#    Catchment TODD
#    - To Todd Drain (south of the Jock)
#    - Subdivision with 43% imp. as per Barrhaven South MSS
#    - 2020-11-30 increase imp. based on P598(04)-11
#    - 2020-11-30 update TODD Tributary Drainage Area to  = 146.015 ha based on P598(04)-11
#    - 2020-11-30 split TODD Drainage Area to MAJOR, MINOR, POND and ALL
#***************************************************************************
#    - JFSA 2021-01-19 add "TODD_MN1" as part of Clarke("W_CLAR_MJ") and remove it from Todd
R0002:C00314-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:TODD_MN2       2.10     .179 No_date   28:00   28.91 .635     .000
      [XIMP=.53:TIMP=.57]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 118.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0002:C00315-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:TODD_MN3        .12     .011 No_date   28:00   28.91 .635     .000
      [XIMP=.53:TIMP=.57]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI=  28.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0002:C00316-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:TODD_MJ       30.23    2.154 No_date   28:03   29.64 .651     .000
      [XIMP=.52:TIMP=.64]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 449.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0002:C00317-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:TODD_ALL     112.91    6.553 No_date   28:06   28.70 .631     .000
      [XIMP=.52:TIMP=.57]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 868.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0002:C00318-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:TODD_P         3.06     .295 No_date   28:00   31.76 .698     .000
      [XIMP=.63:TIMP=.63]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 143.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
# 5-Year + 12% Capture
R0002:C00319-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:TODD_MJ       30.23    2.154 No_date   28:03   29.64  n/a     .000
 *              out <=    1.0 01:TODD_MJn      30.23    2.154 No_date   28:03   29.64  n/a     .000
           overflow <=    1.0 03:TODD_MJj        .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.6551E-04  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
# 5-Year + 12% Capture
R0002:C00320-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:TODD_MN2       2.10     .179 No_date   28:00   28.91  n/a     .000
                out <=    1.0 01:TODD_MN2n      2.10     .179 No_date   28:00   28.91  n/a     .000
           overflow <=    1.0 03:TODD_MN2j       .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.6761E-04  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00321-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:TODD_MN3        .12     .011 No_date   28:00   28.91  n/a     .000
                out <=    1.0 01:TODD_MN3n       .12     .010 No_date   28:00   28.91  n/a     .000
           overflow <=    1.0 03:TODD_MN3j       .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.6566E-04  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00322-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A2            25.50    1.427 No_date   28:04   25.60 .563     .000
      [XIMP=.42:TIMP=.52]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 566.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0002:C00323-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A2            25.50    1.427 No_date   28:04   25.60  n/a     .000
     Major System   /     1.0 02:A2-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A2-MN         25.50    1.427 No_date   28:04   25.60  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00324-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:TODD_MN2n      2.10     .179 No_date   28:00   28.91  n/a     .000
                     +    1.0 02:TODD_MN3n       .12     .010 No_date   28:00   28.91  n/a     .000
                     +    1.0 02:TODD_MJj        .00     .000 No_date    0:00     .00  n/a     .000
                     +    1.0 02:TODD_P         3.06     .295 No_date   28:00   31.77  n/a     .000
                     +    1.0 02:TODD_ALL     112.91    6.553 No_date   28:06   28.70  n/a     .000
                     +    1.0 02:W_CLAR_MJn     1.77     .141 No_date   28:00   27.78  n/a     .000
                  SUM=    1.0 01:TODD         119.95    6.882 No_date   28:05   28.77  n/a     .000
R0002:C00325-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:TODD         119.95    6.882 No_date   28:05   28.77  n/a     .000
      fname :TODD.0002
      remark:Total Flows at Todd Drain
#***************************************************************************
#    Todd Pond 3
#    - Rating curve obtained from Barrhaven South MSS modeling
#    - stantec 2007, Tributary Drainage Area to MSS Pond 3 = 193 ha
#***************************************************************************
R0002:C00326-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:TODD         119.95    6.882 No_date   28:05   28.77  n/a     .000
                out <=    1.0 01:MS_P3        119.95    1.033 No_date   29:08   28.76  n/a     .000
           overflow <=    1.0 03:P3-OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.2183E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00327-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:GreenB     54717.73   48.982 No_date   37:53   13.10  n/a     .000
                     +    1.0 02:MS_P3        119.95    1.033 No_date   29:08   28.76  n/a     .000
                     +    1.0 02:P3-OVF          .00     .000 No_date    0:00     .00  n/a     .000
                     +    1.0 02:TODD_MN2j       .00     .000 No_date    0:00     .00  n/a     .000
                     +    1.0 02:A2-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                  SUM=    1.0 01:SN_TO      54837.69   49.122 No_date   37:53   13.13  n/a     .000
R0002:C00328-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_TO      54837.69   49.122 No_date   37:53   13.13  n/a     .000
      fname :SN_TO.0002
      remark:Total Flows at Todd Drain
#
# Hydrograph from Todd Drain routed to Corrigan Drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 2462
# 2021-02-19 Change the slope from 0.033 % (as per Stantec Report 2007) to 0.05 % so the model will be more stable and g
R0002:C00329-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_TO      54837.69   49.122 No_date   37:53   13.13  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:N_TO       54837.69   48.890 No_date   38:55   13.13  n/a     .000
      [L/S/n=  280./ .050/.045]
      {Vmax=  .729:Dmax= 2.132}
R0002:C00330-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:N_TO       54837.69   48.890 No_date   38:55   13.13  n/a     .000
      fname :N_TO.0002
      remark:Total inflows at Station 2462
#***************************************************************************
#    Catchment CORRIG
#    - To Corrigan Drain (south of the Jock)
#    - Primarily Developed (medium density)
#    - JFSA JAN 2021, add Corrigan subcatchments as per IBI, July 2008
#***************************************************************************
R0002:C00331-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:corr1         15.87    1.352 No_date   28:02   31.77 .698     .000
      [XIMP=.63:TIMP=.63]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 325.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0002:C00332-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:corr1         15.87    1.352 No_date   28:02   31.77  n/a     .000
     Major System   /     1.0 02:corr1-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:corr1-MN      15.87    1.352 No_date   28:02   31.77  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00333-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:corr2         12.47     .100 No_date   29:12   14.83 .326     .000
      [CN= 77.0: N= 3.00: Tp= 1.10]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0002:C00334-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A1-Corrig     15.75     .982 No_date   28:02   25.60 .563     .000
      [XIMP=.42:TIMP=.52]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
```

```
        [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 324.:MNI=.013:SCI=   .0]
        [IaRECimp=   4.00: IaRECper=   4.00]
        [SMIN= 33.81: SMAX=225.43: SK= .010]
R0002:C00335------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A1-Corrig     15.75      .982 No_date   28:02   25.60  n/a      .000
     Major System   /     1.0 02:A1-MJ           .00      .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:A1-MN         15.75      .982 No_date   28:02   25.60  n/a      .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00336------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:B1             2.77      .033 No_date   28:09    9.64 .212      .000
      [CN= 56.0: N= 3.00: Tp=  .23]
      [IaREC= 4.00: SMIN= 79.69: SMAX=531.24: SK= .010]
      [InterEventTime=  12.00]
R0002:C00337------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A4             1.27      .116 No_date   28:01   32.20 .707      .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 253.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0002:C00338------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A4             1.27      .116 No_date   28:01   32.20  n/a      .000
     Major System   /     1.0 02:A4-MJ           .00      .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:A4-MN          1.27      .116 No_date   28:01   32.20  n/a      .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00339------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:A1-MJ           .00      .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:A1-MN         15.75      .982 No_date   28:02   25.60  n/a      .000
                    +     1.0 02:corr1-MJ        .00      .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:corr1-MN      15.87     1.352 No_date   28:02   31.77  n/a      .000
                    +     1.0 02:corr2         12.47      .100 No_date   29:12   14.83  n/a      .000
                    +     1.0 02:B1             2.77      .033 No_date   28:09    9.64  n/a      .000
                    +     1.0 02:A4-MN          1.27      .116 No_date   28:01   32.20  n/a      .000
                 SUM=     1.0 01:MH101         48.13     2.497 No_date   28:02   24.10  n/a      .000
R0002:C00340------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH101         48.13     2.497 No_date   28:02   24.10  n/a      .000
      fname :MH101.0002
      remark:Total Flows at MH101
R0002:C00341------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH101         48.13     2.497 No_date   28:02   24.10  n/a      .000
 *   [RDT= 1.00] out<-    1.0 01:101-102       48.13     2.412 No_date   28:03   24.10  n/a      .000
      [L/S/n=  368./ .540/.013]
      {Vmax= 2.789:Dmax=  .935}
      [Din= 1.05:Dused= 1.14}
R0002:C00342------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:A2-MN         25.50     1.427 No_date   28:04   25.60  n/a      .000
                    +     1.0 02:101-102       48.13     2.412 No_date   28:03   24.10  n/a      .000
                 SUM=     1.0 01:MH102         73.63     3.837 No_date   28:03   24.62  n/a      .000
R0002:C00343------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH102         73.63     3.837 No_date   28:03   24.62  n/a      .000
      fname :MH102.0002
      remark:Total Flows at MH102
R0002:C00344------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A5             1.60      .155 No_date   28:01   34.21 .752      .000
      [XIMP=.71:TIMP=.71]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 300.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0002:C00345------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:A4-MJ           .00      .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:A5             1.60      .155 No_date   28:01   34.21  n/a      .000
                 SUM=     1.0 01:A5T            1.60      .155 No_date   28:01   34.21  n/a      .000
R0002:C00346------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A5T            1.60      .155 No_date   28:01   34.21  n/a      .000
     Major System   /     1.0 02:A5-MJ           .00      .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:A5-MN          1.60      .155 No_date   28:01   34.21  n/a      .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00347------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH102         73.63     3.837 No_date   28:03   24.62  n/a      .000
 *   [RDT= 1.00] out<-    1.0 01:102-103       73.63     3.600 No_date   28:05   24.62  n/a      .000
      [L/S/n=  504./ .280/.013]
      {Vmax= 2.428:Dmax= 1.243}
      [Din= 1.50:Dused= 1.51}
R0002:C00348------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:102-103       73.63     3.600 No_date   28:05   24.62  n/a      .000
                    +     1.0 02:A5-MN          1.60      .155 No_date   28:01   34.21  n/a      .000
                 SUM=     1.0 01:MH103         75.23     3.728 No_date   28:05   24.82  n/a      .000
R0002:C00349------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH103         75.23     3.728 No_date   28:05   24.82  n/a      .000
      fname :MH103.0002
      remark:Total Flows at MH103
R0002:C00350------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH103         75.23     3.728 No_date   28:05   24.82  n/a      .000
     [RDT= 1.00] out<-    1.0 01:103-104       75.23     3.629 No_date   28:07   24.82  n/a      .000
      [L/S/n=  438./ .460/.013]
      {Vmax= 3.024:Dmax=  .924}
      [Din= 1.65:Dused= 1.65}
R0002:C00351------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A6             1.56      .152 No_date   28:01   34.21 .752      .000
      [XIMP=.71:TIMP=.71]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 280.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0002:C00352------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:A5-MJ           .00      .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:A6             1.56      .152 No_date   28:01   34.21  n/a      .000
                 SUM=     1.0 01:A6T            1.56      .152 No_date   28:01   34.21  n/a      .000
R0002:C00353------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A6T            1.56      .152 No_date   28:01   34.21  n/a      .000
     Major System   /     1.0 02:A6-MJ           .00      .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:A6-MN          1.56      .152 No_date   28:01   34.21  n/a      .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00354------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:A6-MN          1.56      .152 No_date   28:01   34.21  n/a      .000
                    +     1.0 02:103-104       75.23     3.629 No_date   28:07   24.82  n/a      .000
                    +     1.0 02:TODD_MJn      30.23     2.154 No_date   28:03   29.64  n/a      .000
                 SUM=     1.0 01:MH104        107.02     5.765 No_date   28:05   26.32  n/a      .000
R0002:C00355------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH104        107.02     5.765 No_date   28:05   26.32  n/a      .000
      fname :MH104.0002
      remark:Total Flows at MH104
R0002:C00356------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:B2            12.31      .731 No_date   28:03   25.66 .564      .000
      [XIMP=.41:TIMP=.54]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 417.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0002:C00357------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:B2            12.31      .731 No_date   28:03   25.66  n/a      .000
     Major System   /     1.0 02:B2-MJ           .00      .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:B2-MN         12.31      .731 No_date   28:03   25.66  n/a      .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00358------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:B2-MN         12.31      .731 No_date   28:03   25.66  n/a      .000
     [RDT= 1.00] out<-    1.0 01:315-333       12.31      .675 No_date   28:04   25.66  n/a      .000
      [L/S/n=  254./ .100/.013]
      {Vmax= 1.136:Dmax=  .665}
      [Din= 1.20:Dused= 1.20}
R0002:C00359------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:B3             5.59      .346 No_date   28:02   25.66 .564      .000
      [XIMP=.41:TIMP=.54]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 345.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0002:C00360------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:B3             5.59      .346 No_date   28:02   25.66  n/a      .000
     Major System   /     1.0 02:B3-MJ           .00      .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:B3-MN          5.59      .346 No_date   28:02   25.66  n/a      .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00361------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:B3-MN          5.59      .346 No_date   28:02   25.66  n/a      .000
                    +     1.0 02:315-333       12.31      .675 No_date   28:04   25.66  n/a      .000
                 SUM=     1.0 01:MH333         17.90     1.009 No_date   28:04   25.66  n/a      .000
R0002:C00362------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH333         17.90     1.009 No_date   28:04   25.66  n/a      .000
      fname :MH333.0002
      remark:Total Flows at MH333
R0002:C00363------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH333         17.90     1.009 No_date   28:04   25.66  n/a      .000
     [RDT= 1.00] out<-    1.0 01:333-335       17.90      .937 No_date   28:05   25.66  n/a      .000
      [L/S/n=  251./ .100/.013]
      {Vmax= 1.217:Dmax=  .826}
      [Din= 1.20:Dused= 1.20}
R0002:C00364------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:333-335       17.90      .937 No_date   28:05   25.66  n/a      .000
     [RDT= 1.00] out<-    1.0 01:335-338       17.90      .888 No_date   28:07   25.66  n/a      .000
      [L/S/n=  185./ .100/.013]
      {Vmax= 1.199:Dmax=  .782}
      [Din= 1.20:Dused= 1.20}
R0002:C00365------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:335-338       17.90      .888 No_date   28:07   25.66  n/a      .000
     [RDT= 1.00] out<-    1.0 01:338-340       17.90      .838 No_date   28:08   25.66  n/a      .000
      [L/S/n=  233./ .100/.013]
      {Vmax= 1.194:Dmax=  .695}
      [Din= 1.35:Dused= 1.35}
R0002:C00366------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:B4             7.60      .459 No_date   28:02   25.66 .564      .000
      [XIMP=.41:TIMP=.54]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 388.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0002:C00367------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:B4             7.60      .459 No_date   28:02   25.66  n/a      .000
     Major System   /     1.0 02:B4-MJ           .00      .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:B4-MN          7.60      .459 No_date   28:02   25.66  n/a      .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00368------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:338-340       17.90      .838 No_date   28:08   25.66  n/a      .000
                    +     1.0 02:B4-MN          7.60      .459 No_date   28:02   25.66  n/a      .000
                 SUM=     1.0 01:MH340         25.50     1.234 No_date   28:05   25.66  n/a      .000
R0002:C00369------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH340         25.50     1.234 No_date   28:05   25.66  n/a      .000
      fname :MH340.0002
      remark:Total Flows at MH340
R0002:C00370------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH340         25.50     1.234 No_date   28:05   25.66  n/a      .000
     [RDT= 1.00] out<-    1.0 01:340-104       25.50     1.182 No_date   28:07   25.66  n/a      .000
      [L/S/n=  240./ .150/.013]
      {Vmax= 1.502:Dmax=  .672}
      [Din= 1.65:Dused= 1.65}
R0002:C00371------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:340-104       25.50     1.182 No_date   28:07   25.66  n/a      .000
                    +     1.0 02:MH104        107.02     5.765 No_date   28:05   26.32  n/a      .000
                 SUM=     1.0 01:MH104T       132.52     6.925 No_date   28:05   26.19  n/a      .000
R0002:C00372------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH104T       132.52     6.925 No_date   28:05   26.19  n/a      .000
     [RDT= 1.00] out<-    1.0 01:104-105      132.52     6.452 No_date   28:06   26.19  n/a      .000
      [L/S/n=  380./ .100/.013]
      {Vmax= 1.871:Dmax= 1.542}
      {HGTH= 2.10:WDTH= 2.40}
R0002:C00373------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:B5             2.20      .187 No_date   28:00   29.51 .648      .000
      [XIMP=.57:TIMP=.57]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 187.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0002:C00374------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:B5             2.20      .187 No_date   28:00   29.51  n/a      .000
     Major System   /     1.0 02:B5-MJ           .00      .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:B5-MN          2.20      .187 No_date   28:00   29.51  n/a      .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00375------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A8              .96      .099 No_date   28:00   34.21 .752      .000
      [XIMP=.71:TIMP=.71]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 186.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0002:C00376------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:A6-MJ           .00      .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:A8              .96      .099 No_date   28:00   34.21  n/a      .000
                 SUM=     1.0 01:A8T             .96      .099 No_date   28:00   34.21  n/a      .000
R0002:C00377------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A8T             .96      .099 No_date   28:00   34.21  n/a      .000
     Major System   /     1.0 02:A8-MJ           .00      .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:A8-MN           .96      .099 No_date   28:00   34.21  n/a      .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00378------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:104-105      132.52     6.452 No_date   28:06   26.19  n/a      .000
                    +     1.0 02:B5-MN          2.20      .187 No_date   28:00   29.51  n/a      .000
                    +     1.0 02:A8-MN           .96      .099 No_date   28:00   34.21  n/a      .000
                    +     1.0 02:TODD_MN3j       .00      .000 No_date    0:00     .00  n/a      .000
                 SUM=     1.0 01:MH105        135.68     6.624 No_date   28:06   26.30  n/a      .000
R0002:C00379------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH105        135.68     6.624 No_date   28:06   26.30  n/a      .000
      fname :MH105.0002
      remark:Total Flows at MH105
R0002:C00380------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
 *  DIVERT HYD      ->    1.0 01:A8-MJ           .00      .000 No_date    0:00     .00  n/a      .000
           diverted <=    1.0 02:A8-MJ-JR        .00      .000 No_date    0:00     .00  n/a      .000
           diverted <=    1.0 03:A8-MJ-B6        .00      .000 No_date    0:00     .00  n/a      .000
R0002:C00381------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    DIVERT HYD      ->    1.0 01:MH105        135.68     6.624 No_date   28:06   26.30  n/a      .000
           diverted <=    1.0 02:MH105-JR      16.59     3.620 No_date   28:06   26.30  n/a      .000
           diverted <=    1.0 03:MH105-B6     119.09     3.004 No_date   28:06   26.30  n/a      .000
R0002:C00382------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:B7             7.19      .479 No_date   28:01   25.66 .564      .000
      [XIMP=.41:TIMP=.54]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 211.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0002:C00383------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:B4-MJ           .00      .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:B7             7.19      .479 No_date   28:01   25.66  n/a      .000
                 SUM=     1.0 01:B7-B4MJ        7.19      .479 No_date   28:01   25.66  n/a      .000
R0002:C00384------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:B7-B4MJ        7.19      .479 No_date   28:01   25.66  n/a      .000
     Major System   /     1.0 02:B7R-MJ          .00      .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:B7R-MN         7.19      .479 No_date   28:01   25.66  n/a      .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00385------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:B7R-MN         7.19      .479 No_date   28:01   25.66  n/a      .000
     [RDT= 1.00] out<-    1.0 01:360-106A       7.19      .451 No_date   28:02   25.66  n/a      .000
      [L/S/n=  167./ .100/.013]
      {Vmax= 1.023:Dmax=  .558}
      [Din= 1.05:Dused= 1.05}
R0002:C00386------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:B6             3.29      .229 No_date   28:00   25.66 .564      .000
      [XIMP=.41:TIMP=.54]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 148.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0002:C00387------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:B6             3.29      .229 No_date   28:00   25.66  n/a      .000
     Major System   /     1.0 02:B6-MJ           .00      .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:B6-MN          3.29      .064 No_date   27:43   25.67  n/a      .000
      {MjSysSto=.1576E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00388------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:EX-LAND       32.50     2.093 No_date   28:02   26.85 .590      .000
      [XIMP=.50:TIMP=.50]
      [LOSS= 2 :CN= 74.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 465.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 36.67: SMAX=244.49: SK= .010]
R0002:C00389------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:EX-LAND       32.50     2.093 No_date   28:02   26.85  n/a      .000
     Major System   /     1.0 02:EX-LAND-MJ      .00      .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:EX-LAND-MN    32.50     2.093 No_date   28:02   26.85  n/a      .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00390------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:B7R-MJ          .00      .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:EX-LAND-MJ      .00      .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:B5-MJ           .00      .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:B6-MJ           .00      .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:B6-MN          3.29      .064 No_date   27:43   25.67  n/a      .000
                    +     1.0 02:A8-MJ-B6        .00      .000 No_date    0:00     .00  n/a      .000
                 SUM=     1.0 01:B6-B7ExMJ      3.29      .064 No_date   27:43   25.67  n/a      .000
R0002:C00391------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:B6-B7ExMJ      3.29      .064 No_date   27:43   25.67  n/a      .000
     Major System   /     1.0 02:B6R-MJ          .00      .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:B6R-MN         3.29      .064 No_date   27:43   25.67  n/a      .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00392------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH105-B6     119.09     3.004 No_date   28:06   26.30  n/a      .000
     [RDT= 1.00] out<-    1.0 01:105-106A     119.09     3.006 No_date   28:08   26.30  n/a      .000
      [L/S/n=  208./ .100/.013]
      {Vmax= 1.596:Dmax= 1.247}
      [Din= 1.80:Dused= 1.80}
R0002:C00393------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:360-106A       7.19      .451 No_date   28:02   25.66  n/a      .000
                    +     1.0 02:105-106A     119.09     3.006 No_date   28:08   26.30  n/a      .000
                    +     1.0 02:B6R-MN         3.29      .064 No_date   27:43   25.67  n/a      .000
                    +     1.0 02:B6R-MJ          .00      .000 No_date    0:00     .00  n/a      .000
                 SUM=     1.0 01:MH106A       129.57     3.466 No_date   28:03   26.25  n/a      .000
R0002:C00394------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH106A       129.57     3.466 No_date   28:03   26.25  n/a      .000
      fname :MH106A.0002
      remark:Total Flows at MH106A
R0002:C00395------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH106A       129.57     3.466 No_date   28:03   26.25  n/a      .000
 *   [RDT= 1.00] out<-    1.0 01:106A-106     129.57     3.450 No_date   28:04   26.25  n/a      .000
      [L/S/n=  190./ .100/.013]
      {Vmax= 1.626:Dmax= 1.406}
      [Din= 1.80:Dused= 1.80}
R0002:C00396------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A9             2.44      .240 No_date   28:01   34.21 .752      .000
      [XIMP=.71:TIMP=.71]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 262.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0002:C00397------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A9             2.44      .240 No_date   28:01   34.21  n/a      .000
     Major System   /     1.0 02:A9-MJ           .00      .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:A9-MN          2.44      .240 No_date   28:01   34.21  n/a      .000
R0002:C00398------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:106A-106     129.57     3.450 No_date   28:04   26.25  n/a      .000
                    +     1.0 02:A9-MN          2.44      .240 No_date   28:01   34.21  n/a      .000
                 SUM=     1.0 01:MH106        132.01     3.666 No_date   28:03   26.40  n/a      .000
R0002:C00399------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH106        132.01     3.666 No_date   28:03   26.40  n/a      .000
      fname :MH106.0002
      remark:Total Flows at MH106
R0002:C00400------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH106        132.01     3.666 No_date   28:03   26.40  n/a      .000
 *   [RDT= 1.00] out<-    1.0 01:106-107      132.01     3.602 No_date   28:06   26.40  n/a      .000
      [L/S/n=  123./ .100/.013]
      {Vmax= 1.631:Dmax= 1.482}
      [Din= 1.80:Dused= 1.81}
R0002:C00401------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A10            4.14      .246 No_date   28:01   23.49 .516      .000
      [XIMP=.35:TIMP=.47]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
```

```
        [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 183.:MNI=.013:SCI=   .0]
        [IaRECimp=   4.00: IaRECper=   4.00]
        [SMIN= 33.81: SMAX=225.43: SK= .010]
R0002:C00402-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A10            4.14     .246 No_date   28:01   23.49  n/a     .000
     Major System   /     1.0 02:A10-MJ          .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A10-MN         4.14     .246 No_date   28:01   23.49  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00403-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A11           10.61     .781 No_date   28:02   29.20 .642     .000
      [XIMP=.53:TIMP=.62]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 379.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0002:C00404-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A11           10.61     .781 No_date   28:02   29.20  n/a     .000
     Major System   /     1.0 02:A11-MJ          .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A11-MN        10.61     .781 No_date   28:02   29.20  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00405-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:106-107      132.01    3.602 No_date   28:06   26.40  n/a     .000
                    +     1.0 02:A10-MN         4.14     .246 No_date   28:01   23.49  n/a     .000
                    +     1.0 02:A11-MN        10.61     .781 No_date   28:02   29.20  n/a     .000
                 SUM=     1.0 01:MH107        146.76    4.589 No_date   28:02   26.52  n/a     .000
R0002:C00406-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH107        146.76    4.589 No_date   28:02   26.52  n/a     .000
      fname :MH107.0002
      remark:Total Flows at MH107
R0002:C00407-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH107        146.76    4.589 No_date   28:02   26.52  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:107-119      146.76    4.493 No_date   28:07   26.52  n/a     .000
      [L/S/n=  114./ .120/.013]
      {Vmax= 1.848:Dmax= 1.558}
      [Din= 1.80:Dused= 1.90}
R0002:C00408-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:107-119      146.76    4.493 No_date   28:07   26.52  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:119-108      146.76    4.469 No_date   28:07   26.52  n/a     .000
      [L/S/n=   66./ .120/.013]
      {Vmax= 1.838:Dmax= 1.546}
      [Din= 1.80:Dused= 1.88}
R0002:C00409-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A12           12.29     .834 No_date   28:01   25.66 .564     .000
      [XIMP=.41:TIMP=.54]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 183.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0002:C00410-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A12           12.29     .834 No_date   28:01   25.66  n/a     .000
     Major System   /     1.0 02:A12-MJ          .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A12-MN        12.29     .834 No_date   28:01   25.66  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00411-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A13            2.59     .239 No_date   28:02   34.21 .752     .000
      [XIMP=.71:TIMP=.71]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 379.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0002:C00412-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A13            2.59     .239 No_date   28:02   34.21  n/a     .000
     Major System   /     1.0 02:A13-MJ          .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A13-MN         2.59     .239 No_date   28:02   34.21  n/a     .000
R0002:C00413-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:Pond-Block     2.94     .190 No_date   28:01   24.31 .534     .000
      [XIMP=.41:TIMP=.41]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 183.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0002:C00414-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:119-108      146.76    4.469 No_date   28:07   26.52  n/a     .000
                    +     1.0 02:A13-MN         2.59     .239 No_date   28:02   34.21  n/a     .000
                    +     1.0 02:A12-MN        12.29     .834 No_date   28:01   25.66  n/a     .000
                 SUM=     1.0 01:MH108        161.64    5.450 No_date   28:03   26.58  n/a     .000
R0002:C00415-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH108        161.64    5.450 No_date   28:03   26.58  n/a     .000
      fname :MH108.0002
      remark:Total Flows at MH108
R0002:C00416-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH108        161.64    5.450 No_date   28:03   26.58  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:108-116      161.64    5.396 No_date   28:04   26.58  n/a     .000
      [L/S/n=   77./ .130/.013]
      {Vmax= 1.987:Dmax= 1.637}
      [Din= 1.80:Dused= 1.99}
R0002:C00417-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:108-116      161.64    5.396 No_date   28:04   26.58  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:116-corrig   161.64    5.363 No_date   28:04   26.58  n/a     .000
      [L/S/n=   80./ .130/.013]
      {Vmax= 1.983:Dmax= 1.631}
      [Din= 1.80:Dused= 1.99}
R0002:C00418-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:116-corrig   161.64    5.363 No_date   28:04   26.58  n/a     .000
                    +     1.0 02:Pond-Block     2.94     .190 No_date   28:01   24.31  n/a     .000
                 SUM=     1.0 01:Corrigan     164.58    5.522 No_date   28:04   26.54  n/a     .000
R0002:C00419-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:Corrigan     164.58    5.522 No_date   28:04   26.54  n/a     .000
      fname :Corrigan.0002
      remark:HYD_COMMENT=["Total Flows at Corrigan Pond]
R0002:C00420-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:Corrigan     164.58    5.522 No_date   28:04   26.54  n/a     .000
                out <=    1.0 01:Co-P         164.58    4.479 No_date   28:12   26.54  n/a     .000
           overflow <=    1.0 03:Co-P-OVF        .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.9246E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00421-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:Co-P-OVF        .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:Co-P         164.58    4.479 No_date   28:12   26.54  n/a     .000
                    +     1.0 02:N_TO       54837.69   48.890 No_date   38:55   13.13  n/a     .000
                    +     1.0 02:MH105-JR      16.59    3.620 No_date   28:06   26.30  n/a     .000
                    +     1.0 02:A8-MJ-JR        .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:A9-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:A10-MJ          .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:A11-MJ          .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:A12-MJ          .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:A13-MJ          .00     .000 No_date    0:00     .00  n/a     .000
                 SUM=     1.0 01:corrig     55018.86   49.095 No_date   38:55   13.18  n/a     .000
R0002:C00422-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:corrig     55018.86   49.095 No_date   38:55   13.18  n/a     .000
      fname :corrig.0002
      remark:Total Flows at Corrigan Pond
#*****************************************************************************
#    Corrigan Pond 1
#    - Rating curve obtained from Barrhaven South MSS modeling
#    - Tributary Drainage Area to MSS Pond 1 = 145 ha
#*****************************************************************************
#
# Hydrograph from Corrigan Drain routed to Jockvale Road
# Channel X-Section obtained from RVCA Hydraulic Model - Station 2462
#
R0002:C00423-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:corrig     55018.86   49.095 No_date   38:55   13.18  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N_MI       55018.86   49.093 No_date   38:58   13.18  n/a     .000
      [L/S/n=  580./ .445/.045]
      {Vmax= 1.454:Dmax= 1.224}
#*****************************************************************************
#    Catchment MILLS
#    - To SWM Facility north of the Jock
#    - Primarily residental development
#*****************************************************************************
R0002:C00424-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:MILLS        175.99    7.048 No_date   28:08   22.75 .500     .000
      [XIMP=.38:TIMP=.38]
      [LOSS= 2 :CN= 74.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI=1118.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 36.67: SMAX=244.49: SK= .010]
#*****************************************************************************
#    Chapman Mills SWM Pond
#    - Rating curve obtained from CCL hydraulic modeling
#*****************************************************************************
R0002:C00425-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:MILLS        175.99    7.048 No_date   28:08   22.75  n/a     .000
                out <=    1.0 01:MILL_P       175.99    2.401 No_date   28:46   22.75  n/a     .000
           overflow <=    1.0 03:MIL-OV          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.1446E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00426-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N_MI       55018.86   49.093 No_date   38:58   13.18  n/a     .000
                    +     1.0 02:MIL-OV          .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:MILL_P       175.99    2.401 No_date   28:46   22.75  n/a     .000
                 SUM=     1.0 01:SN_MI      55194.85   49.313 No_date   38:56   13.21  n/a     .000
R0002:C00427-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_MI      55194.85   49.313 No_date   38:56   13.21  n/a     .000
      fname :SN_MI.0002
      remark:Total Flows at Jockvale Road
#
# Hydrograph from Jockvale Road routed to Heart's Desire
# Channel X-Section obtained from RVCA Hydraulic Model - Station 689
#
R0002:C00428-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_MI      55194.85   49.313 No_date   38:56   13.21  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N_DE       55194.85   49.260 No_date   39:17   13.21  n/a     .000
      [L/S/n= 1962./ .223/.045]
      {Vmax= 1.144:Dmax= 1.611}
#*****************************************************************************
#    Catchment DESIRE
#    - To Jock River (north of the Jock)
#    - Rural-estate subdivision (Heart's Desire Community)
#*****************************************************************************
R0002:C00429-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:DESIRE        23.78     .936 No_date   28:03   19.26 .423     .000
      [XIMP=.25:TIMP=.25]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 400.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
#*****************************************************************************
#    Catchment JOCKVA
#    - To Jockvale SWM Facility
#    - Residential development & golf course
#    - JFSA 2021-01-11 update JOCKVA after updating CORRIG as per IBI GROUP, July 2008.
#      JOCKVA area became 225.13 ha instead of 257.63 ha. JOCKVA separated into two areas JOCKVA and EX-LAND 32.5 ha as
#*****************************************************************************
R0002:C00430-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:JOCKVA       225.13   10.636 No_date   28:10   26.85 .590     .000
      [XIMP=.50:TIMP=.50]
      [LOSS= 2 :CN= 74.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI=1311.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 36.67: SMAX=244.49: SK= .010]
R0002:C00431-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:EX-LAND-MN    32.50    2.093 No_date   28:02   26.85  n/a     .000
                    +     1.0 02:JOCKVA       225.13   10.636 No_date   28:10   26.85  n/a     .000
                    +     1.0 02:B2-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:B3-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                 SUM=     1.0 01:JOCKVA-TO    257.63   12.234 No_date   28:07   26.85  n/a     .000
R0002:C00432-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:JOCKVA-TO    257.63   12.234 No_date   28:07   26.85  n/a     .000
      fname :JOCKVA-TO.0002
      remark:Total Flows at KB first pond
#*****************************************************************************
#    Jockvale SWM Facility
#    - Rating curve obtained from Jockvale Servicing Study (CCL 1999)
#*****************************************************************************
R0002:C00433-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:JOCKVA-TO    257.63   12.234 No_date   28:07   26.85  n/a     .000
                out <=    1.0 01:JOCK_P       257.63    2.560 No_date   29:05   26.85  n/a     .000
           overflow <=    1.0 03:JO-OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.3334E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0002:C00434-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N_DE       55194.85   49.260 No_date   39:17   13.21  n/a     .000
                    +     1.0 02:DESIRE        23.78     .936 No_date   28:03   19.26  n/a     .000
                    +     1.0 02:JO-OVF          .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:JOCK_P       257.63    2.560 No_date   29:05   26.85  n/a     .000
                 SUM=     1.0 01:SN_DE      55476.26   49.606 No_date   39:13   13.27  n/a     .000
R0002:C00435-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_DE      55476.26   49.606 No_date   39:13   13.27  n/a     .000
      fname :SN_DE.0002
      remark:Total Flows at Heart's Desire
#
# Hydrograph from Heart's Desire routed to Rideau River
# Channel X-Section obtained from RVCA Hydraulic Model - Station 0
#
R0002:C00436-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_DE      55476.26   49.606 No_date   39:13   13.27  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N1         55476.26   49.604 No_date   39:19   13.27  n/a     .000
      [L/S/n=  563./ .967/.045]
      {Vmax= 1.490:Dmax=  .801}
#*****************************************************************************
#    Catchment S-2
#    - To Jock River (north and south)
#    - Undeveloped floodplain and river
#*****************************************************************************
R0002:C00437-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:S-2          102.94    1.373 No_date   28:20   13.01 .286     .000
      [CN= 72.0: N= 3.00: Tp=  .40]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
R0002:C00438-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N1         55476.26   49.604 No_date   39:19   13.27  n/a     .000
                    +     1.0 02:S-2          102.94    1.373 No_date   28:20   13.01  n/a     .000
                 SUM=     1.0 01:SN_N1      55579.20   49.703 No_date   39:19   13.27  n/a     .000
R0002:C00439-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_N1      55579.20   49.703 No_date   39:19   13.27  n/a     .000
      fname :SN_N1.0002
      remark:Total Flows at Rideau River
#############################################################################
  ** END OF RUN :    4
*********************************************************************************************
 RUN#:COMMAND#
R0005:C00001-----------------------------------------------------------------------------------
     START
      [TZERO =    .00 hrs on        0]
      [METOUT=   2    (1=imperial, 2=metric output)]
      [NSTORM=   1 ]
      [NRUN  = 0005 ]
#*****************************************************************************
#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
#*****************************************************************************
#  Project Name: [Jock River]    Project Number: [1474-16]
#  Date        : 04-03-2021
#  Modeller    : [M.M.]
#  Company     : JFSAinc.
#  License #   :  2549237
#*****************************************************************************
# CALIBRATION OF SUMMER MODEL PARAMETERS
# USING CONTINUOUS SIMULATIONS
# Rainfall data from JFSA raingauge installed at site + other gauges by the City
# Use data collected from May 1st to July 14, 2003
# 2020-11-30 change TMJSTO in COMPUTE DUALHYD (TMJSTO = 0.1 instead of 0.0001)
# 2020-12-01 correct pond curve values
# 2020-12-01 change W_CLAR_BRAZ XIMP to 0.55, SLPI=[0.5](%) (impervious slope), and LGI up to 700m
# 2021-02-19 Change the slope for ROUTE CHANNEL Station 2462 (NHYDout=["N_TO"] ,NHYDin=["SN_TO"]) from 0.033 % (as per S
# 2021-02-19 Change the slope for ROUTE CHANNEL Station 5002 (NHYDout=["N_WC"] ,NHYDin=["SN_CE"]) from 0.01 % (as per St
# ---------------------------------------------------------------------------
R0005:C00002-----------------------------------------------------------------------------------
     READ STORM
      Filename = storm.001
      Comment  = Pluie SCS de 24 hres 1:5 ans pour Ottawa CDA
      [SDT=10.00:SDUR=  24.00:PTOT=  57.12]
R0005:C00003-----------------------------------------------------------------------------------
     MODIFY STORM
      [RFACT=  1.00:TSHIFT= 960.00 min]
      [SDT=10.00:SDUR=  40.00:PTOT=  57.12]
R0005:C00004-----------------------------------------------------------------------------------
     DEFAULT VALUES
      Filename = T:\PROJ\1474-16\Design\20201026-QuantityControlAnalysis\SWMHYMO\SMR-Model\updated3\CitiGate.DEF
      ICASEdv  = 1 (read and print data)
      FileTitle= File comment: [Based onvarious calibration exercises in Onta
                 THE FOLLOWING PARAMETERS ARE USED IN THE DESIGN STANDHYD COM
      Horton's infiltration equation parameters:
      [Fo= 76.20 mm/hr] [Fc=13.20 mm/hr] [DCAY= 4.14 /hr] [F=  .00 mm]
      Parameters for PERVIOUS surfaces in STANDHYD:
      [IAper=   4.67 mm] [LGP=50.00 m] [MNP= .250]
      Parameters for IMPERVIOUS surfaces in STANDHYD:
      [IAimp=   1.57 mm] [CLI= 1.50]   [MNI= .013]
      Parameters used in NASHYD:
      [Ia=   4.67 mm] [N= 3.00]
      Average monthly Pan Evaporation data in    (mm)
   JAN   FEB   MAR   APR   MAY   JUN   JUL   AUG   SEP   OCT   NOV   DEC
   .00   .00   .00   .00   .00   .00   .00   .00   .00   .00   .00   .00
      Average monthly Potential Evapotranspiration in    (mm)
   JAN   FEB   MAR   APR   MAY   JUN   JUL   AUG   SEP   OCT   NOV   DEC
   .00   .00   .00   .00   .00   .00   .00   .00   .00   .00   .00   .00
R0005:C00005-----------------------------------------------------------------------------------
     COMPUTE API
      [APIini= 50.00: APIkdy= .8500: APIkdt= .9989]
      {APImax= 90.83: APIavg= 60.09: APImin= 44.87}
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.32
R0005:C00006-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:JR_HW       3680.00    9.398 No_date   37:02   16.41 .287     .000
      [CN= 64.0: N= 3.00: Tp= 7.13]
      [IaREC= 4.00: SMIN= 57.05: SMAX=380.32: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.32
R0005:C00007-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_13        971.00    3.405 No_date   32:36   15.29 .268     .000
      [CN= 61.0: N= 3.00: Tp= 3.76]
      [IaREC= 4.00: SMIN= 64.50: SMAX=430.01: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.80
R0005:C00008-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:JR_GWM      3074.00    4.682 No_date   39:59   13.23 .232     .000
      [CN= 55.0: N= 3.00: Tp=11.33]
      [IaREC= 4.00: SMIN= 83.24: SMAX=554.96: SK= .010]
      [InterEventTime=  12.00]
R0005:C00009-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:JR_ASH      1781.00    8.521 No_date   32:43   20.12 .352     .000
      [CN= 72.0: N= 3.00: Tp= 3.91]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
R0005:C00010-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_11        500.00    4.354 No_date   29:22   17.18 .301     .000
      [CN= 66.0: N= 3.00: Tp= 1.24]
      [IaREC= 4.00: SMIN= 52.62: SMAX=350.79: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.80
R0005:C00011-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:NN_CK       1917.00    6.210 No_date   34:31   17.18 .301     .000
      [CN= 66.0: N= 3.00: Tp= 5.29]
      [IaREC= 4.00: SMIN= 52.62: SMAX=350.79: SK= .010]
      [InterEventTime=  12.00]
#
```

```
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.52
R0005:C00012------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_10       5666.00   16.924 No_date   38:02   20.12 .352     .000
      [CN= 72.0: N= 3.00: Tp= 8.00]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.75
R0005:C00013------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:KG_CK       8376.00   16.342 No_date   39:59   17.18 .301     .000
      [CN= 66.0: N= 3.00: Tp=11.66]
      [IaREC= 4.00: SMIN= 52.62: SMAX=350.79: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.68
R0005:C00014------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_9        1132.00    6.963 No_date   30:55   19.24 .337     .000
      [CN= 70.0: N= 3.00: Tp= 2.51]
      [IaREC= 4.00: SMIN= 43.07: SMAX=287.10: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.82
R0005:C00015------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:NC_CK       4464.00    8.109 No_date   39:59   15.66 .274     .000
      [CN= 62.0: N= 3.00: Tp=11.32]
      [IaREC= 4.00: SMIN= 61.90: SMAX=412.66: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.80
R0005:C00016------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_8         131.00    1.298 No_date   28:57   16.03 .281     .000
      [CN= 63.0: N= 3.00: Tp=  .90]
      [IaREC= 4.00: SMIN= 59.42: SMAX=396.11: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.65
R0005:C00017------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:HB_DR       3854.00    9.385 No_date   38:41   17.18 .301     .000
      [CN= 66.0: N= 3.00: Tp= 8.42]
      [IaREC= 4.00: SMIN= 52.62: SMAX=350.79: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.82
R0005:C00018------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_7        3197.00    7.027 No_date   36:28   13.89 .243     .000
      [CN= 57.0: N= 3.00: Tp= 6.65]
      [IaREC= 4.00: SMIN= 76.32: SMAX=508.81: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.75
R0005:C00019------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_6         165.00     .641 No_date   33:06   17.58 .308     .000
      [CN= 67.0: N= 3.00: Tp= 4.18]
      [IaREC= 4.00: SMIN= 50.55: SMAX=336.97: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.67
R0005:C00020------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:VG_DR       1332.00    4.803 No_date   35:19   20.12 .352     .000
      [CN= 72.0: N= 3.00: Tp= 5.95]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
R0005:C00021------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_5         224.00    4.100 No_date   28:45   22.97 .402     .000
      [CN= 77.0: N= 3.00: Tp=  .75]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.20
R0005:C00022------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:FL_CK       4945.00   22.837 No_date   33:22   21.04 .368     .000
      [CN= 74.0: N= 3.00: Tp= 4.45]
      [IaREC= 4.00: SMIN= 36.67: SMAX=244.49: SK= .010]
      [InterEventTime=  12.00]
R0005:C00023------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_5A2        20.00     .483 No_date   28:36   25.62 .448     .000
      [CN= 81.0: N= 3.00: Tp=  .62]
      [IaREC= 4.00: SMIN= 25.21: SMAX=168.09: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.61
R0005:C00024------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_5A1      1412.00    4.646 No_date   37:58   21.98 .385     .000
      [CN= 75.0: N= 3.00: Tp= 8.00]
      [IaREC= 4.00: SMIN= 33.81: SMAX=225.43: SK= .010]
      [InterEventTime=  12.00]
R0005:C00025------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_4         585.00    6.688 No_date   29:57   25.62 .448     .000
      [CN= 81.0: N= 3.00: Tp= 1.75]
      [IaREC= 4.00: SMIN= 25.21: SMAX=168.09: SK= .010]
      [InterEventTime=  12.00]
R0005:C00026------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:LM_CK       1021.00    8.861 No_date   30:48   25.07 .439     .000
      [CN= 80.0: N= 3.00: Tp= 2.46]
      [IaREC= 4.00: SMIN= 26.32: SMAX=175.50: SK= .010]
      [InterEventTime=  12.00]
R0005:C00027------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_2         177.00    3.240 No_date   28:45   22.97 .402     .000
      [CN= 77.0: N= 3.00: Tp=  .75]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0005:C00028------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SM_DR       1122.00    8.165 No_date   31:48   25.62 .448     .000
      [CN= 81.0: N= 3.00: Tp= 3.25]
      [IaREC= 4.00: SMIN= 25.21: SMAX=168.09: SK= .010]
      [InterEventTime=  12.00]
R0005:C00029------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:MO_DR       2737.00   17.859 No_date   31:33   22.47 .393     .000
      [CN= 76.0: N= 3.00: Tp= 3.03]
      [IaREC= 4.00: SMIN= 32.46: SMAX=216.39: SK= .010]
      [InterEventTime=  12.00]
#
# Routing hydrographs
#
# Starting with the addition of Jock River Headwater and Subwatershed 13
#
R0005:C00030------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:JR_HW       3680.00    9.398 No_date   37:02   16.41  n/a     .000
                    +     1.0 02:SW_13        971.00    3.405 No_date   32:36   15.29  n/a     .000
                 SUM=     1.0 01:S_N13       4651.00   11.949 No_date   35:33   16.17  n/a     .000
#
# Sum of hydrographs from Node 13 routed to Node 13A
# (Approximated cross-section - see cross-section 258)
# Use n=0.04 for summer conditions and n=0.025 for spring conditions
#
R0005:C00031------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N13       4651.00   11.949 No_date   35:33   16.17  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N13A        4651.00    9.514 No_date   39:57   16.17  n/a     .000
      [L/S/n= 9074./ .022/.040]
      {Vmax=  .478:Dmax= 3.020}
#
# Addition of Subwatershed Jock River at Goodwood Marsh to Node 13A
#
R0005:C00032------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N13A        4651.00    9.514 No_date   39:57   16.17  n/a     .000
                    +     1.0 02:JR_GWM      3074.00    4.682 No_date   39:59   13.23  n/a     .000
                 SUM=     1.0 01:SN13A       7725.00   14.196 No_date   39:59   15.00  n/a     .000
#
# Insertion of a reservoir to simulate the effects of the Goodwood Marsh
#
R0005:C00033------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:SN13A       7725.00   14.196 No_date   39:59   15.00  n/a     .000
                out <=    1.0 01:RES_GM      7725.00    3.149 No_date   57:25   15.00  n/a     .000
     {MxStoUsed=.6321E+02  m3}
#
R0005:C00034------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:RES_GM      7725.00    3.149 No_date   57:25   15.00  n/a     .000
      fname :H_RESGM
      remark:Outflow from Res GM
# Output of Reservoir Goodwood Marsh routed from Node 13A to Node 12
# (Approximated cross-section - see cross-section 258)
# Use n=0.04 for summer conditions and n=0.025 for spring conditions
R0005:C00035------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:RES_GM      7725.00    3.149 No_date   57:25   15.00  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N12         7725.00    3.137 No_date   60:12   15.00  n/a     .000
      [L/S/n= 5926./ .076/.040]
      {Vmax=  .527:Dmax= 1.429}
#
# Addition of Subwatershed Jock River at Ashton to Node 12
#
R0005:C00036------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N12         7725.00    3.137 No_date   60:12   15.00  n/a     .000
                    +     1.0 02:JR_ASH      1781.00    8.521 No_date   32:43   20.12  n/a     .000
                 SUM=     1.0 01:S_N12       9506.00   10.498 No_date   32:46   15.96  n/a     .000
R0005:C00037------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:S_N12       9506.00   10.498 No_date   32:46   15.96  n/a     .000
      fname :H_SN12
      remark:flow at S_N12 near Ashton
#
# Sum of hydrographs from Node 12 routed to Node 11
# (Approximated cross-section - see cross-section 258)
# Use n=0.04 for summer conditions and n=0.025 for spring conditions
#
# Sum of hydrographs from Node 12 routed to Node 11 with Dummy section 248
#
R0005:C00038------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N12       9506.00   10.498 No_date   32:46   15.96  n/a     .000
     [RDT= 1.00] out<-    1.0 01:Dum11       9506.00   10.383 No_date   33:07   15.96  n/a     .000
      [L/S/n=  972./ .054/.040]
      {Vmax=  .648:Dmax= 2.406}
#
# Addition of Subwatershed 11 and No Name Creek to Node 11
#
R0005:C00039------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:Dum11       9506.00   10.383 No_date   33:07   15.96  n/a     .000
                    +     1.0 02:SW_11        500.00    4.354 No_date   29:22   17.18  n/a     .000
                    +     1.0 02:NN_CK       1917.00    6.210 No_date   34:31   17.18  n/a     .000
                 SUM=     1.0 01:S_N11      11923.00   17.560 No_date   33:09   16.21  n/a     .000
#
# Sum of hydrographs from Node 11 routed to Node 10
# Section 1
#
R0005:C00040------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N11      11923.00   17.560 No_date   33:09   16.21  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N10        11923.00   12.006 No_date   38:17   16.21  n/a     .000
      [L/S/n=14028./ .157/.040]
      {Vmax=  .461:Dmax= 1.087}
#
# Addition of Subwatershed 10 to Node 10
#
R0005:C00041------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N10        11923.00   12.006 No_date   38:17   16.21  n/a     .000
                    +     1.0 02:SW_10       5666.00   16.924 No_date   38:02   20.12  n/a     .000
                 SUM=     1.0 01:S_N10      17589.00   28.927 No_date   38:09   17.47  n/a     .000
R0005:C00042------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:S_N10      17589.00   28.927 No_date   38:09   17.47  n/a     .000
      fname :H_SN10
      remark:flow at S_N10: N10 + SW_10
# Addition of Kings Creek to S_N10
#
R0005:C00043------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:S_N10      17589.00   28.927 No_date   38:09   17.47  n/a     .000
                    +     1.0 02:KG_CK       8376.00   16.342 No_date   39:59   17.18  n/a     .000
                 SUM=     1.0 01:S_N10A     25965.00   44.722 No_date   39:35   17.37  n/a     .000
#
# Sum of hydrographs from Node 10 routed to Node 9
# Section 2
#
R0005:C00044------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N10A     25965.00   44.722 No_date   39:35   17.37  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N9         25965.00   43.534 No_date   39:59   17.37  n/a     .000
      [L/S/n= 3982./ .075/.040]
      {Vmax=  .664:Dmax= 1.502}
#
# Addition of Subwatershed 9 and Nichols Creek to Node 9
#
R0005:C00045------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N9         25965.00   43.534 No_date   39:59   17.37  n/a     .000
                    +     1.0 02:SW_9        1132.00    6.963 No_date   30:55   19.24  n/a     .000
                    +     1.0 02:NC_CK       4464.00    8.109 No_date   39:59   15.66  n/a     .000
                 SUM=     1.0 01:S_N9       31561.00   53.366 No_date   39:59   17.20  n/a     .000
#
# Sum of hydrographs from Node 9 routed to Node 8
# Section 3
#
R0005:C00046------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N9       31561.00   53.366 No_date   39:59   17.20  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N8         31561.00   49.404 No_date   39:59   17.20  n/a     .000
      [L/S/n= 2269./ .088/.045]
      {Vmax=  .370:Dmax= 1.520}
#
# Addition of Subwatershed 8 and Hobb's Drain to Node 8
#
R0005:C00047------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N8         31561.00   49.404 No_date   39:59   17.20  n/a     .000
                    +     1.0 02:SW_8         131.00    1.298 No_date   28:57   16.03  n/a     .000
                    +     1.0 02:HB_DR       3854.00    9.385 No_date   38:41   17.18  n/a     .000
                 SUM=     1.0 01:S_N8       35546.00   58.845 No_date   39:59   17.19  n/a     .000
#
# Sum of hydrographs from Node 8 routed to Node 7
# Section 4
#
R0005:C00048------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N8       35546.00   58.845 No_date   39:59   17.19  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N7         35546.00   48.127 No_date   45:08   17.19  n/a     .000
      [L/S/n= 3750./ .053/.070]
      {Vmax=  .208:Dmax= 1.855}
#
# Addition of Subwatershed 7 to Node 7
#
R0005:C00049------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N7         35546.00   48.127 No_date   45:08   17.19  n/a     .000
                    +     1.0 02:SW_7        3197.00    7.027 No_date   36:28   13.89  n/a     .000
                 SUM=     1.0 01:S_N7       38743.00   51.395 No_date   44:14   16.92  n/a     .000
R0005:C00050------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:S_N7       38743.00   51.395 No_date   44:14   16.92  n/a     .000
      fname :H_SN7
      remark:flow at S_N7: N7 + SW_7
# Insertion of a reservoir to simulate the effects of the Richmond Fen.
# Storage area and volumes were estimated from available topo maps.
# Release rate from fen was assumed to be controlled by the downstream
# river cross-section for summer conditions.  It is was assumed that for up to
# 0.75 m of water, the main channel of the river provided the storage.  Above
# this depth, the wetland starts to signigicantly store water.
#
R0005:C00051------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:S_N7       38743.00   51.395 No_date   44:14   16.92  n/a     .000
                out <=    1.0 01:RES_RF     38743.00   27.976 No_date   59:12   16.92  n/a     .000
     {MxStoUsed=.1784E+03  m3}
R0005:C00052------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:RES_RF     38743.00   27.976 No_date   59:12   16.92  n/a     .000
      fname :H_ResRF
      remark:outflow of Richmond Fen
#
# Sum of hydrographs from Node 7 routed to Node 6
# Section 5
#
R0005:C00053------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:RES_RF     38743.00   27.976 No_date   59:12   16.92  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N6         38743.00   27.930 No_date   60:29   16.92  n/a     .000
      [L/S/n= 3056./ .082/.025]
      {Vmax=  .460:Dmax=  .895}
#
# Addition of Subwatershed 6 and Van Gaal Drain to Node 6
#
R0005:C00054------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N6         38743.00   27.930 No_date   60:29   16.92  n/a     .000
                    +     1.0 02:SW_6         165.00     .641 No_date   33:06   17.58  n/a     .000
                    +     1.0 02:VG_DR       1332.00    4.803 No_date   35:19   20.12  n/a     .000
                 SUM=     1.0 01:S_N6       40240.01   27.944 No_date   60:06   17.03  n/a     .000
#
# Sum of hydrographs from Node 6 routed to Node 5
# Section 6
#
R0005:C00055------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N6       40240.01   27.944 No_date   60:06   17.03  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N5         40240.01   27.922 No_date   60:57   17.03  n/a     .000
      [L/S/n= 1852./ .054/.035]
      {Vmax=  .397:Dmax= 1.002}
#
# Addition of Subwatershed 5 and Flowing Creek to Node 5
#
R0005:C00056------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N5         40240.01   27.922 No_date   60:57   17.03  n/a     .000
                    +     1.0 02:SW_5         224.00    4.100 No_date   28:45   22.97  n/a     .000
                    +     1.0 02:FL_CK       4945.00   22.837 No_date   33:22   21.04  n/a     .000
                 SUM=     1.0 01:S_N5       45409.01   43.566 No_date   35:28   17.49  n/a     .000
#
# Sum of hydrographs from Node 5 routed to Node 5A
# Section 7
#
R0005:C00057------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N5       45409.01   43.566 No_date   35:28   17.49  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N5A        45409.01   43.490 No_date   35:47   17.49  n/a     .000
      [L/S/n=  556./ .090/.040]
      {Vmax=  .465:Dmax= 1.060}
#
# Addition of Subwatershed 5A1 and Subwatershed 5A2 to Node 5A
#
R0005:C00058------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N5A        45409.01   43.490 No_date   35:47   17.49  n/a     .000
                    +     1.0 02:SW_5A2        20.00     .483 No_date   28:36   25.62  n/a     .000
                    +     1.0 02:SW_5A1      1412.00    4.646 No_date   37:58   21.98  n/a     .000
                 SUM=     1.0 01:S_N5A      46841.01   47.976 No_date   35:58   17.63  n/a     .000
#
# Sum of hydrographs from Node 5A routed to Node 4
# Section 8
#
R0005:C00059------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N5A      46841.01   47.976 No_date   35:58   17.63  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N4         46841.01   46.217 No_date   37:26   17.63  n/a     .000
      [L/S/n= 4630./ .043/.035]
      {Vmax=  .756:Dmax= 3.116}
#
# Addition of Subwatershed 4 and Leamy Creek to Node 4
#
R0005:C00060------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N4         46841.01   46.217 No_date   37:26   17.63  n/a     .000
                    +     1.0 02:SW_4         585.00    6.688 No_date   29:57   25.62  n/a     .000
                    +     1.0 02:LM_CK       1021.00    8.861 No_date   30:48   25.07  n/a     .000
                 SUM=     1.0 01:S_N4       48447.00   50.308 No_date   36:47   17.89  n/a     .000
R0005:C00061------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:S_N4       48447.00   50.308 No_date   36:47   17.89  n/a     .000
      fname :S_N4.0005
      remark:flow at S_N4
#
# Sum of hydrographs from Node 4 routed to Node 2
# Section 9
#
R0005:C00062------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N4       48447.00   50.308 No_date   36:47   17.89  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N2         48447.00   50.131 No_date   37:08   17.89  n/a     .000
      [L/S/n= 1667./ .060/.040]
```

```
      {Vmax=  .781:Dmax= 3.131}
#
# Addition of Subwatershed 2 with Monohan Drain and Smith Drain to Node 2
#
R0005:C00063------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                 1.0 02:N2          48447.00   50.131 No_date   37:08   17.89  n/a     .000
                       +    1.0 02:SW_2          177.00    3.240 No_date   28:45   22.97  n/a     .000
                       +    1.0 02:SM_DR        1122.00    8.165 No_date   31:48   25.62  n/a     .000
                       +    1.0 02:MO_DR        2737.00   17.859 No_date   31:33   22.47  n/a     .000
                    SUM=    1.0 01:S_N2        52483.00   67.222 No_date   33:17   18.31  n/a     .000
R0005:C00064------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD                1.0 01:S_N2        52483.00   67.222 No_date   33:17   18.31  n/a     .000
      fname :H_SN2
      remark:flow at S_N2 Jock River Gauge at Moodie Dr.
#
# Sum of hydrographs from Node 2 routed to Node 1
# Section 10
#
#***************************************************************************
#
# Hydrograph from Node 2 routed to Node 416
# Channel X-Section obtained from RVCA Hydraulic Model - Station 9025
#
R0005:C00065------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N2        52483.00   67.222 No_date   33:17   18.31  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N_416       52483.00   65.664 No_date   34:34   18.31  n/a     .000
      [L/S/n= 2327./ .050/.055]
      {Vmax=  .658:Dmax= 2.660}
#***************************************************************************
#    Catchment SW-1a
#    - Portion of RVCA catchment SW_1 outside of Reach 1 subwatershed
#    - Undeveloped agricultural land
#***************************************************************************
R0005:C00066------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_1a         536.42    3.012 No_date   31:18   19.00 .333     .000
      [CN= 72.0: N= 3.00: Tp= 2.79]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
R0005:C00067------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-Okeefe    44.93    4.591 No_date   28:03   42.00 .735     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .75:LGI= 547.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0005:C00068------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:S-1-Okeefe    44.93    4.591 No_date   28:03   42.00  n/a     .000
     Major System   /     1.0 02:S-1-OkMJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:S-1-OkMN      44.93    4.591 No_date   28:03   42.00  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00069------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:S-1-OkMJ        .00     .000 No_date    0:00     .00  n/a     .000
                     +    1.0 02:S-1-OkMN      44.93    4.591 No_date   28:03   42.00  n/a     .000
                  SUM=    1.0 01:S-1-OkS       44.93    4.591 No_date   28:03   42.00  n/a     .000
R0005:C00070------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:S-1-OkS       44.93    4.591 No_date   28:03   42.00  n/a     .000
                out <=    1.0 01:S-1-OkSR      44.93     .340 No_date   29:30   42.00  n/a     .000
           overflow <=    1.0 03:S-1-OkSovf      .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.1133E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00071------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N_416       52483.00   65.664 No_date   34:34   18.31  n/a     .000
                     +    1.0 02:SW_1a         536.42    3.012 No_date   31:18   19.00  n/a     .000
                     +    1.0 02:S-1-OkSR      44.93     .340 No_date   29:30   42.00  n/a     .000
                     +    1.0 02:S-1-OkSovf      .00     .000 No_date    0:00     .00  n/a     .000
                  SUM=    1.0 01:SN_416      53064.36   68.103 No_date   34:06   18.33  n/a     .000
R0005:C00072------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_416      53064.36   68.103 No_date   34:06   18.33  n/a     .000
      fname :SN_416.0005
      remark:Total Flows at Highway 416 before Station 7245
#
# Hydrograph from Node 416 routed to Node at Okeefe drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 7245
#
R0005:C00073------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_416      53064.36   68.103 No_date   34:06   18.33  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N_OK        53064.36   68.074 No_date   34:06   18.33  n/a     .000
      [L/S/n=  497./ .302/.055]
      {Vmax= 1.357:Dmax= 2.255}
#***************************************************************************
#    Catchment OKEEFE
#    - To O'Keefe drain (north of the Jock)
#    - Developed with assumed 43% imp.
#    - 2020-12-01 add Okeefe model (Area 513.02 HA) instead of current Okeefe (Area 513.02 HA)
#    - 2020-11-20 Okeefe detailed model was added as per the NOVATECH SWMHYMO model (Citi-Gate 2014).
#***************************************************************************
R0005:C00074------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:O-1           63.72     .514 No_date   28:59   13.88 .243     .000
      [CN= 61.0: N= 3.00: Tp=  .90]
      [IaREC= 4.00: SMIN= 64.50: SMAX=430.01: SK= .010]
      [InterEventTime=  12.00]
R0005:C00075------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:O-1           63.72     .514 No_date   28:59   13.88  n/a     .000
     [RDT= 1.00] out<-    1.0 01:O-1R          63.72     .470 No_date   29:19   13.88  n/a     .000
      [L/S/n=  960./ .630/.043]
      {Vmax=  .682:Dmax=  .283}
R0005:C00076------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:O-2           28.61     .183 No_date   29:14   12.96 .227     .000
      [CN= 57.0: N= 3.00: Tp= 1.10]
      [IaREC= 4.00: SMIN= 76.32: SMAX=508.81: SK= .010]
      [InterEventTime=  12.00]
R0005:C00077------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:O-4           46.94     .222 No_date   29:01    9.87 .173     .000
      [CN= 49.0: N= 3.00: Tp=  .90]
      [IaREC= 4.00: SMIN=104.59: SMAX=697.25: SK= .010]
      [InterEventTime=  12.00]
R0005:C00078------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:O-1R          63.72     .470 No_date   29:19   13.88  n/a     .000
                     +    1.0 02:O-2           28.61     .183 No_date   29:14   12.96  n/a     .000
                     +    1.0 02:O-4           46.94     .222 No_date   29:01    9.87  n/a     .000
                  SUM=    1.0 01:OKF-N        139.27     .867 No_date   29:14   12.34  n/a     .000
R0005:C00079------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:OKF-N        139.27     .867 No_date   29:14   12.34  n/a     .000
     [RDT= 1.00] out<-    1.0 01:OKF-NR       139.27     .866 No_date   29:17   12.34  n/a     .000
      [L/S/n=  210./ .810/.043]
      {Vmax=  .853:Dmax=  .550}
R0005:C00080------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:O-6           16.46     .074 No_date   28:46    8.71 .152     .000
      [CN= 43.0: N= 3.00: Tp=  .70]
      [IaREC= 4.00: SMIN=134.47: SMAX=896.47: SK= .010]
      [InterEventTime=  12.00]
R0005:C00081------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:O-3           39.67     .605 No_date   28:25   15.80 .277     .000
      [XIMP=.15:TIMP=.30]
      [LOSS= 2 :CN= 50.0]
      [Pervious     area: IAper= 4.67:SLPP= .32:LGP= 440.:MNP=.035:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .32:LGI=1880.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 99.77: SMAX=665.12: SK= .010]
R0005:C00082------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:O-5           60.63    1.453 No_date   28:11   17.75 .311     .000
      [XIMP=.13:TIMP=.26]
      [LOSS= 2 :CN= 61.0]
      [Pervious     area: IAper= 4.67:SLPP=1.38:LGP= 550.:MNP=.035:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.38:LGI=1450.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 64.50: SMAX=430.01: SK= .010]
R0005:C00083------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:OKF-NR       139.27     .866 No_date   29:17   12.34  n/a     .000
                     +    1.0 02:O-3           39.67     .605 No_date   28:25   15.80  n/a     .000
                     +    1.0 02:O-5           60.63    1.453 No_date   28:11   17.75  n/a     .000
                     +    1.0 02:O-6           16.46     .074 No_date   28:46    8.71  n/a     .000
                  SUM=    1.0 01:PT1          256.03    2.312 No_date   28:24   13.92  n/a     .000
R0005:C00084------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:O-7            5.28     .041 No_date   28:37   11.36 .199     .000
      [CN= 54.0: N= 3.00: Tp=  .60]
      [IaREC= 4.00: SMIN= 87.01: SMAX=580.07: SK= .010]
      [InterEventTime=  12.00]
R0005:C00085------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:PT1          256.03    2.312 No_date   28:24   13.92  n/a     .000
                     +    1.0 02:O-7            5.28     .041 No_date   28:37   11.36  n/a     .000
                  SUM=    1.0 01:FF           261.31    2.351 No_date   28:25   13.87  n/a     .000
R0005:C00086------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:FF           261.31    2.351 No_date   28:25   13.87  n/a     .000
     [RDT= 1.00] out<-    1.0 01:DRAIN1       261.31    2.298 No_date   28:31   13.87  n/a     .000
      [L/S/n=  302./1.000/.043]
      {Vmax=  .817:Dmax=  .624}
R0005:C00087------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:D1             1.17     .044 No_date   28:12   23.49 .411     .000
      [CN= 84.0: N= 3.00: Tp=  .28]
      [IaREC= 4.00: SMIN= 21.09: SMAX=140.62: SK= .010]
      [InterEventTime=  12.00]
R0005:C00088------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A1             2.50     .337 No_date   28:01   44.03 .771     .000
      [XIMP=.68:TIMP=.85]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 224.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0005:C00089------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:A1             2.50     .337 No_date   28:01   44.03  n/a     .000
                out <=    1.0 01:A1-STR         2.50     .076 No_date   28:28   44.03  n/a     .000
           overflow <=    1.0 03:A1-OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.5227E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00090------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:ST-2            .59     .062 No_date   28:00   33.25 .582     .000
      [XIMP=.46:TIMP=.57]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 109.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0005:C00091------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:ST-2            .59     .062 No_date   28:00   33.25  n/a     .000
                out <=    1.0 01:ST2STR          .59     .052 No_date   28:03   33.25  n/a     .000
           overflow <=    1.0 03:ST2OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.1200E-02  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00092------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:O-8           60.55     .658 No_date   29:05   18.08 .317     .000
      [CN= 69.0: N= 3.00: Tp= 1.00]
      [IaREC= 4.00: SMIN= 44.82: SMAX=298.82: SK= .010]
      [InterEventTime=  12.00]
R0005:C00093------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:O-8           60.55     .658 No_date   29:05   18.08  n/a     .000
     [RDT= 1.00] out<-    1.0 01:O8PIPE        60.55     .654 No_date   29:09   18.08  n/a     .000
      [L/S/n=  335./ .100/.013]
      {Vmax=  .991:Dmax=  .368}
      {HGTH= 1.20:WDTH= 1.80}
R0005:C00094------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:DRAIN1       261.31    2.298 No_date   28:31   13.87  n/a     .000
                     +    1.0 02:D1             1.17     .044 No_date   28:12   23.49  n/a     .000
                     +    1.0 02:A1-STR         2.50     .076 No_date   28:28   44.03  n/a     .000
                     +    1.0 02:A1-OVF          .00     .000 No_date    0:00     .00  n/a     .000
                     +    1.0 02:ST2STR          .59     .052 No_date   28:03   33.25  n/a     .000
                     +    1.0 02:ST2OVF          .00     .000 No_date    0:00     .00  n/a     .000
                     +    1.0 02:O8PIPE        60.55     .654 No_date   29:09   18.08  n/a     .000
                  SUM=    1.0 01:ST2-IN       326.12    2.907 No_date   28:39   14.95  n/a     .000
R0005:C00095------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A7             3.51     .460 No_date   28:02   44.03 .771     .000
      [XIMP=.68:TIMP=.85]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 265.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0005:C00096------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:A7             3.51     .460 No_date   28:02   44.03  n/a     .000
                out <=    1.0 01:A7-STR         3.51     .108 No_date   28:29   44.03  n/a     .000
           overflow <=    1.0 03:A7-OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.7349E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00097------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:ST-3            .71     .073 No_date   28:00   33.25 .582     .000
      [XIMP=.46:TIMP=.57]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 119.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0005:C00098------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:ST-3            .71     .073 No_date   28:00   33.25  n/a     .000
                out <=    1.0 01:ST3STR          .71     .063 No_date   28:03   33.25  n/a     .000
           overflow <=    1.0 03:ST3OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.1203E-02  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00099------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:ST2-IN       326.12    2.907 No_date   28:39   14.95  n/a     .000
                     +    1.0 02:A7-STR         3.51     .108 No_date   28:29   44.03  n/a     .000
                     +    1.0 02:A7-OVF          .00     .000 No_date    0:00     .00  n/a     .000
                     +    1.0 02:ST3STR          .71     .063 No_date   28:03   33.25  n/a     .000
                     +    1.0 02:ST3OVF          .00     .000 No_date    0:00     .00  n/a     .000
                  SUM=    1.0 01:PT2ST3       330.34    3.026 No_date   28:38   15.30  n/a     .000
R0005:C00100------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:PT2ST3       330.34    3.026 No_date   28:38   15.30  n/a     .000
     [RDT= 1.00] out<-    1.0 01:DRAIN2       330.34    2.842 No_date   29:04   15.30  n/a     .000
      [L/S/n=  592./ .230/.043]
      {Vmax=  .607:Dmax=  .930}
R0005:C00101------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:D2             2.28     .035 No_date   29:05   23.49 .411     .000
      [CN= 84.0: N= 3.00: Tp=  .99]
      [IaREC= 4.00: SMIN= 21.09: SMAX=140.62: SK= .010]
      [InterEventTime=  12.00]
R0005:C00102------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A17           12.04    1.379 No_date   28:04   44.03 .771     .000
      [XIMP=.68:TIMP=.85]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 491.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0005:C00103------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:A17           12.04    1.379 No_date   28:04   44.03  n/a     .000
                out <=    1.0 01:A17STR        12.04     .353 No_date   28:36   44.03  n/a     .000
           overflow <=    1.0 03:A17OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.2492E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00104------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:ST-4            .35     .038 No_date   28:00   33.25 .582     .000
      [XIMP=.46:TIMP=.57]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=  84.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0005:C00105------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:ST-4            .35     .038 No_date   28:00   33.25  n/a     .000
                out <=    1.0 01:ST4STR          .35     .031 No_date   28:03   33.25  n/a     .000
           overflow <=    1.0 03:ST4OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.1040E-02  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00106------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A18            5.30     .671 No_date   28:02   44.03 .771     .000
      [XIMP=.68:TIMP=.85]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 326.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0005:C00107------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:A18            5.30     .671 No_date   28:02   44.03  n/a     .000
                out <=    1.0 01:A18STR         5.30     .160 No_date   28:31   44.03  n/a     .000
           overflow <=    1.0 03:A18OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.1108E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00108------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:DRAIN2       330.34    2.842 No_date   29:04   15.30  n/a     .000
                     +    1.0 02:D2             2.28     .035 No_date   29:05   23.49  n/a     .000
                     +    1.0 02:A17STR        12.04     .353 No_date   28:36   44.03  n/a     .000
                     +    1.0 02:A17OVF          .00     .000 No_date    0:00     .00  n/a     .000
                     +    1.0 02:ST4STR          .35     .031 No_date   28:03   33.25  n/a     .000
                     +    1.0 02:ST4OVF          .00     .000 No_date    0:00     .00  n/a     .000
                     +    1.0 02:A18STR         5.30     .160 No_date   28:31   44.03  n/a     .000
                     +    1.0 02:A18OVF          .00     .000 No_date    0:00     .00  n/a     .000
                  SUM=    1.0 01:PT3ST4       350.31    3.317 No_date   28:57   16.79  n/a     .000
R0005:C00109------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:PT3ST4       350.31    3.317 No_date   28:57   16.79  n/a     .000
     [RDT= 1.00] out<-    1.0 01:DRAIN3       350.31    3.191 No_date   29:19   16.79  n/a     .000
      [L/S/n=  525./ .230/.043]
      {Vmax=  .635:Dmax=  .979}
R0005:C00110------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:D3             2.51     .055 No_date   28:45   25.92 .454     .000
      [CN= 86.0: N= 3.00: Tp=  .73]
      [IaREC= 4.00: SMIN= 17.43: SMAX=116.21: SK= .010]
      [InterEventTime=  12.00]
R0005:C00111------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:C1             3.41     .450 No_date   28:01   44.03 .771     .000
      [XIMP=.68:TIMP=.85]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 261.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0005:C00112------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:C1             3.41     .450 No_date   28:01   44.03  n/a     .000
                out <=    1.0 01:C1-STR         3.41     .104 No_date   28:29   44.03  n/a     .000
           overflow <=    1.0 03:C1-OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.7123E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00113------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:ST-5            .45     .048 No_date   28:00   33.25 .582     .000
      [XIMP=.46:TIMP=.57]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=  95.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0005:C00114------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:ST-5            .45     .048 No_date   28:00   33.25  n/a     .000
                out <=    1.0 01:ST5STR          .45     .040 No_date   28:03   33.25  n/a     .000
           overflow <=    1.0 03:ST5OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.1108E-02  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00115------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:DRAIN3       350.31    3.191 No_date   29:19   16.79  n/a     .000
                     +    1.0 02:D3             2.51     .055 No_date   28:45   25.92  n/a     .000
                     +    1.0 02:C1-STR         3.41     .104 No_date   28:29   44.03  n/a     .000
                     +    1.0 02:C1-OVF          .00     .000 No_date    0:00     .00  n/a     .000
                     +    1.0 02:ST5STR          .45     .040 No_date   28:03   33.25  n/a     .000
                     +    1.0 02:ST5OVF          .00     .000 No_date    0:00     .00  n/a     .000
                  SUM=    1.0 01:ST5-E        356.68    3.312 No_date   29:13   17.14  n/a     .000
R0005:C00116------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:STRAND         7.59     .640 No_date   28:12   42.86 .750     .000
      [XIMP=.64:TIMP=.85]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1230.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0005:C00117------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:STRAND         7.59     .640 No_date   28:12   42.86  n/a     .000
                out <=    1.0 01:S-POND         7.59     .048 No_date   29:55   42.86  n/a     .000
           overflow <=    1.0 03:S-OVF           .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.2288E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00118------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:ST5-E        356.68    3.312 No_date   29:13   17.14  n/a     .000
                     +    1.0 02:S-POND         7.59     .048 No_date   29:55   42.86  n/a     .000
                     +    1.0 02:S-OVF           .00     .000 No_date    0:00     .00  n/a     .000
                  SUM=    1.0 01:SSAOUT       364.27    3.358 No_date   29:13   17.68  n/a     .000
R0005:C00119------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SSAOUT       364.27    3.358 No_date   29:13   17.68  n/a     .000
      fname :SSAOUT.0005
      remark:SSAOUT
R0005:C00120------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:Area-A        66.75    5.433 No_date   28:11   42.06 .736     .000
      [XIMP=.64:TIMP=.80]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1155.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0005:C00121------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:Area-A        66.75    5.433 No_date   28:11   42.06  n/a     .000
      fname :Area-A.0005
      remark:SMWF-A Inflow
R0005:C00122------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:Area-A        66.75    5.433 No_date   28:11   42.06  n/a     .000
                out <=    1.0 01:SWMF-A        66.75     .298 No_date   30:20   42.06  n/a     .000
           overflow <=    1.0 03:SWMAOV          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.2106E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00123------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SWMF-A        66.75     .298 No_date   30:20   42.06  n/a     .000
```

```
       fname :SWMF-A.0005
       remark:SMWF-A Outflow
R0005:C00124------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                  1.0 02:SSAOUT       364.27    3.358 No_date   29:13   17.68  n/a      .000
                     +       1.0 02:SWMF-A        66.75     .298 No_date   30:20   42.06  n/a      .000
                     +       1.0 02:SWMAOV          .00     .000 No_date    0:00     .00  n/a      .000
                  SUM=       1.0 01:PT4ST5       431.02    3.613 No_date   29:19   21.45  n/a      .000
R0005:C00125------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:C6             1.87     .260 No_date   28:01   44.03 .771      .000
      [XIMP=.68:TIMP=.85]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 193.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0005:C00126------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:C6             1.87     .260 No_date   28:01   44.03  n/a      .000
                out <=    1.0 01:C6-STR         1.87     .058 No_date   28:26   44.03  n/a      .000
           overflow <=    1.0 03:C6-OVF          .00     .000 No_date    0:00     .00  n/a      .000
     {MxStoUsed=.3924E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00127------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:C7             1.62     .227 No_date   28:01   44.03 .771      .000
      [XIMP=.68:TIMP=.85]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 180.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0005:C00128------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:C7             1.62     .227 No_date   28:01   44.03  n/a      .000
                out <=    1.0 01:C7-STR         1.62     .050 No_date   28:26   44.03  n/a      .000
           overflow <=    1.0 03:C7-OVF          .00     .000 No_date    0:00     .00  n/a      .000
     {MxStoUsed=.3391E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00129------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:ST-6            .41     .044 No_date   28:00   33.25 .582      .000
      [XIMP=.46:TIMP=.57]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=  91.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0005:C00130------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:ST-6            .41     .044 No_date   28:00   33.25  n/a      .000
                out <=    1.0 01:ST6STR          .41     .036 No_date   28:03   33.25  n/a      .000
           overflow <=    1.0 03:ST6OVF          .00     .000 No_date    0:00     .00  n/a      .000
     {MxStoUsed=.1092E-02  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00131------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                  1.0 02:PT4ST5       431.02    3.613 No_date   29:19   21.45  n/a      .000
                     +       1.0 02:C6-STR         1.87     .058 No_date   28:26   44.03  n/a      .000
                     +       1.0 02:C6-OVF          .00     .000 No_date    0:00     .00  n/a      .000
                     +       1.0 02:C7-STR         1.62     .050 No_date   28:26   44.03  n/a      .000
                     +       1.0 02:C7-OVF          .00     .000 No_date    0:00     .00  n/a      .000
                     +       1.0 02:ST6STR          .41     .036 No_date   28:03   33.25  n/a      .000
                     +       1.0 02:ST6OVF          .00     .000 No_date    0:00     .00  n/a      .000
                  SUM=       1.0 01:PT5ST6       434.92    3.684 No_date   29:13   21.64  n/a      .000
R0005:C00132------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:PT5ST6       434.92    3.684 No_date   29:13   21.64  n/a      .000
     [RDT= 1.00] out<-    1.0 01:DRAIN4       434.92    3.572 No_date   29:35   21.64  n/a      .000
      [L/S/n=  324./ .100/.043]
      {Vmax=  .480:Dmax= 1.218}
R0005:C00133------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:D4             1.73     .049 No_date   28:35   27.98 .490      .000
      [CN= 88.0: N= 3.00: Tp=  .60]
      [IaREC= 4.00: SMIN= 14.94: SMAX= 99.61: SK= .010]
      [InterEventTime=  12.00]
R0005:C00134------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:Area-B        24.04    2.784 No_date   28:04   40.98 .717      .000
      [XIMP=.62:TIMP=.77]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=1.40:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.40:LGI= 693.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0005:C00135------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:Area-B        24.04    2.784 No_date   28:04   40.98  n/a      .000
                out <=    1.0 01:SWMF-B        24.04     .278 No_date   28:55   40.98  n/a      .000
           overflow <=    1.0 03:SWMBOVF         .00     .000 No_date    0:00     .00  n/a      .000
     {MxStoUsed=.6277E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00136------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                  1.0 02:DRAIN4       434.92    3.572 No_date   29:35   21.64  n/a      .000
                     +       1.0 02:D4             1.73     .049 No_date   28:35   27.98  n/a      .000
                     +       1.0 02:SWMF-B        24.04     .278 No_date   28:55   40.98  n/a      .000
                     +       1.0 02:SWMBOVF         .00     .000 No_date    0:00     .00  n/a      .000
                  SUM=       1.0 01:D4-EX       460.69    3.861 No_date   29:25   22.68  n/a      .000
R0005:C00137------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:D4-EX        460.69    3.861 No_date   29:25   22.68  n/a      .000
     [RDT= 1.00] out<-    1.0 01:DRAIN5       460.69    3.810 No_date   29:44   22.68  n/a      .000
      [L/S/n=  413./ .160/.033]
      {Vmax=  .561:Dmax=  .821}
R0005:C00138------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:D5             1.90     .044 No_date   28:42   25.92 .454      .000
      [CN= 86.0: N= 3.00: Tp=  .69]
      [IaREC= 4.00: SMIN= 17.43: SMAX=116.21: SK= .010]
      [InterEventTime=  12.00]
R0005:C00139------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:O-13SDF        9.74     .290 No_date   28:22   24.64 .431      .000
      [CN= 81.0: N= 3.00: Tp=  .43]
      [IaREC= 4.00: SMIN= 25.21: SMAX=168.09: SK= .010]
      [InterEventTime=  12.00]
R0005:C00140------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:O-13SDF        9.74     .290 No_date   28:22   24.64  n/a      .000
                out <=    1.0 01:SDF            9.74     .032 No_date   32:11   24.64  n/a      .000
           overflow <=    1.0 03:OVFSDF          .00     .000 No_date    0:00     .00  n/a      .000
     {MxStoUsed=.1268E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00141------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                  1.0 02:DRAIN5       460.69    3.810 No_date   29:44   22.68  n/a      .000
                     +       1.0 02:D5             1.90     .044 No_date   28:42   25.92  n/a      .000
                     +       1.0 02:SDF            9.74     .032 No_date   32:11   24.64  n/a      .000
                  SUM=       1.0 01:PT6MC       472.33    3.863 No_date   29:44   22.73  n/a      .000
R0005:C00142------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:O-15          10.67     .385 No_date   28:13   23.43 .410      .000
      [CN= 82.0: N= 3.00: Tp=  .30]
      [IaREC= 4.00: SMIN= 23.09: SMAX=153.94: SK= .010]
      [InterEventTime=  12.00]
R0005:C00143------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                  1.0 02:PT6MC       472.33    3.863 No_date   29:44   22.73  n/a      .000
                     +       1.0 02:O-15         10.67     .385 No_date   28:13   23.43  n/a      .000
                  SUM=       1.0 01:M-C         483.00    3.921 No_date   29:44   22.75  n/a      .000
R0005:C00144------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:M-C          483.00    3.921 No_date   29:44   22.75  n/a      .000
     [RDT= 1.00] out<-    1.0 01:O-14Ch       483.00    3.787 No_date   30:06   22.75  n/a      .000
      [L/S/n=  845./ .100/.033]
      {Vmax=  .748:Dmax= 1.430}
R0005:C00145------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:O-14           5.00     .300 No_date   28:04   23.43 .410      .000
      [CN= 82.0: N= 3.00: Tp=  .13]
      [IaREC= 4.00: SMIN= 23.09: SMAX=153.94: SK= .010]
      [InterEventTime=  12.00]
R0005:C00146------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                  1.0 02:O-14Ch      483.00    3.787 No_date   30:06   22.75  n/a      .000
                     +       1.0 02:O-14          5.00     .300 No_date   28:04   23.43  n/a      .000
                  SUM=       1.0 01:OKEEFE      488.00    3.807 No_date   30:06   22.75  n/a      .000
#*****************************************************************************
#    Okeefe Pond
#    - Rating curve obtained assuming 40m3/ha in 24 hours for quality control
#      and a ratio of the catchment area to the West Clarke pond rating curve
#      from the MSS for the next coordinates
#*****************************************************************************
R0005:C00147------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-D2        18.67    2.097 No_date   28:02   42.00 .735      .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .75:LGI= 353.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0005:C00148------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:S-1-D2        18.67    2.097 No_date   28:02   42.00  n/a      .000
     Major System   /     1.0 02:S-1-D2J         .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:S-1-D2N       18.67    2.097 No_date   28:02   42.01  n/a      .000
      {MjSysSto=.1144E-01, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00149------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                  1.0 02:S-1-D2J        .00     .000 No_date    0:00     .00  n/a      .000
                     +       1.0 02:S-1-D2N      18.67    2.097 No_date   28:02   42.01  n/a      .000
                  SUM=       1.0 01:S-1-D2S      18.67    2.097 No_date   28:02   42.01  n/a      .000
R0005:C00150------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:S-1-D2S       18.67    2.097 No_date   28:02   42.01  n/a      .000
                out <=    1.0 01:S-1-D2R       18.67     .141 No_date   29:24   42.01  n/a      .000
           overflow <=    1.0 03:S-1-D2Rovf      .00     .000 No_date    0:00     .00  n/a      .000
     {MxStoUsed=.4714E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00151------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-D3         6.79     .831 No_date   28:01   42.00 .735      .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .75:LGI= 213.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0005:C00152------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:S-1-D3         6.79     .831 No_date   28:01   42.00  n/a      .000
     Major System   /     1.0 02:S-1-D3J         .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:S-1-D3N        6.79     .831 No_date   28:01   42.00  n/a      .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00153------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                  1.0 02:S-1-D3J        .00     .000 No_date    0:00     .00  n/a      .000
                     +       1.0 02:S-1-D3N       6.79     .831 No_date   28:01   42.00  n/a      .000
                  SUM=       1.0 01:S-1-D3S       6.79     .831 No_date   28:01   42.00  n/a      .000
R0005:C00154------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:S-1-D3S        6.79     .831 No_date   28:01   42.00  n/a      .000
                out <=    1.0 01:S-1-D3R        6.79     .051 No_date   29:18   42.00  n/a      .000
           overflow <=    1.0 03:S-1-D3Rovf      .00     .000 No_date    0:00     .00  n/a      .000
     {MxStoUsed=.1715E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00155------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                  1.0 02:N_OK      53064.36   68.074 No_date   34:06   18.33  n/a      .000
                     +       1.0 02:OKEEFE      488.00    3.807 No_date   30:06   22.75  n/a      .000
                     +       1.0 02:S-1-D2R      18.67     .141 No_date   29:24   42.01  n/a      .000
                     +       1.0 02:S-1-D3R       6.79     .051 No_date   29:18   42.00  n/a      .000
                     +       1.0 02:S-1-D2Rovf     .00     .000 No_date    0:00     .00  n/a      .000
                     +       1.0 02:S-1-D3Rovf     .00     .000 No_date    0:00     .00  n/a      .000
                  SUM=       1.0 01:SN_OK     53577.82   69.530 No_date   34:06   18.39  n/a      .000
R0005:C00156------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_OK      53577.82   69.530 No_date   34:06   18.39  n/a      .000
      fname :SN_OK.0005
      remark:Total Flows at Okeefe Drain
#
# Hydrograph from Node Okeefe routed to Node at Foster Drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 6215
#
R0005:C00157------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_OK      53577.82   69.530 No_date   34:06   18.39  n/a      .000
     [RDT= 1.00] out<-    1.0 01:N_FO       53577.82   69.319 No_date   34:07   18.39  n/a      .000
      [L/S/n= 1183./ .076/.035]
      {Vmax= 1.032:Dmax= 2.625}
#*****************************************************************************
#    Catchment FOSTER
#    - To Foster ditch (north of the Jock)
#    - Partially developed (medium density); remaining agricultural
#    - 2020-12-01 JFSA Foster area is 332 as per Foster SWMF Environmental Study Report, CH2MHILL, Aug 2013.
#    - 2020-12-01 decrease Foster drainage area from (373 HA) to (307.98 HA) after increasing Okeefe drainage area to (5
#    - 2021-02-12  update Foster area to 325.44 ha as measured from QGIS
#*****************************************************************************
R0005:C00158------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:FOSTER       325.44   19.055 No_date   28:13   37.71 .660      .000
      [XIMP=.55:TIMP=.55]
      [LOSS= 2 :CN= 74.0]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1473.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 36.67: SMAX=244.49: SK= .010]
#*****************************************************************************
#    Foster Pond
#    - Rating curve obtained assuming 40m3/ha in 24 hours for quality control
#      and a ratio of the catchment area to the West Clarke pond rating curve
#      from the MSS for the next coordinates
#*****************************************************************************
R0005:C00159------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:FOSTER       325.44   19.055 No_date   28:13   37.71  n/a      .000
                out <=    1.0 01:P_FOS        325.44    5.174 No_date   29:08   37.71  n/a      .000
           overflow <=    1.0 03:FO-OVF          .00     .000 No_date    0:00     .00  n/a      .000
     {MxStoUsed=.5004E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00160------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                  1.0 02:P_FOS       325.44    5.174 No_date   29:08   37.71  n/a      .000
                     +       1.0 02:FO-OVF         .00     .000 No_date    0:00     .00  n/a      .000
                  SUM=       1.0 01:FOSTER-OUT  325.44    5.174 No_date   29:08   37.71  n/a      .000
#*****************************************************************************
R0005:C00161------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:W_CLAR_BRA    73.29    6.276 No_date   28:06   41.22 .722      .000
      [XIMP=.60:TIMP=.65]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 699.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0005:C00162------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:W_CLAR_BRA    73.29    6.276 No_date   28:06   41.22  n/a      .000
                out <=    1.0 01:MS_P10        73.29    1.101 No_date   28:56   41.22  n/a      .000
           overflow <=    1.0 03:P10-OVF         .00     .000 No_date    0:00     .00  n/a      .000
     {MxStoUsed=.1093E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00163------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-FO-D2      4.94     .508 No_date   28:01   37.71 .660      .000
      [XIMP=.55:TIMP=.55]
      [LOSS= 2 :CN= 74.0]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 181.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 36.67: SMAX=244.49: SK= .010]
R0005:C00164------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:S-1-FO-D2      4.94     .508 No_date   28:01   37.71  n/a      .000
     Major System   /     1.0 02:S-1-FO-D2J      .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:S-1-FO-D2N     4.94     .508 No_date   28:01   37.73  n/a      .000
      {MjSysSto=.2737E-02, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00165------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                  1.0 02:S-1-FO-D2J     .00     .000 No_date    0:00     .00  n/a      .000
                     +       1.0 02:S-1-FO-D2N    4.94     .508 No_date   28:01   37.73  n/a      .000
                  SUM=       1.0 01:S-1-FO-D2S    4.94     .508 No_date   28:01   37.73  n/a      .000
R0005:C00166------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:S-1-FO-D2S     4.94     .508 No_date   28:01   37.73  n/a      .000
                out <=    1.0 01:S-1-FO-D2R     4.94     .033 No_date   29:34   37.73  n/a      .000
           overflow <=    1.0 03:S-1FOD2ovf      .00     .000 No_date    0:00     .00  n/a      .000
     {MxStoUsed=.1108E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00167------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                  1.0 02:FOSTER-OUT  325.44    5.174 No_date   29:08   37.71  n/a      .000
                     +       1.0 02:S-1-FO-D2R    4.94     .033 No_date   29:34   37.73  n/a      .000
                     +       1.0 02:S-1FOD2ovf     .00     .000 No_date    0:00     .00  n/a      .000
                  SUM=       1.0 01:980         330.38    5.207 No_date   29:08   37.71  n/a      .000
R0005:C00168------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:980          330.38    5.207 No_date   29:08   37.71  n/a      .000
      fname :980.0005
      remark:Total Flows at Station 980 on Foster Drain
#
# Hydrograph from Node Foster SWM (Station 980)to Node at station 520
# Channel X-Section obtained from RVCA Hydraulic Model - Station 980
#
R0005:C00169------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:980          330.38    5.207 No_date   29:08   37.71  n/a      .000
     [RDT= 1.00] out<-    1.0 01:980-out      330.38    5.026 No_date   29:21   37.71  n/a      .000
      [L/S/n=  460./ .043/.035]
      {Vmax=  .602:Dmax= 1.267}
R0005:C00170------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-FO-D1      5.11     .605 No_date   28:00   41.68 .730      .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 74.0]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 185.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 36.67: SMAX=244.49: SK= .010]
R0005:C00171------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:S-1-FO-D1      5.11     .605 No_date   28:00   41.68  n/a      .000
     Major System   /     1.0 02:S-1-FO-D1J      .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:S-1-FO-D1N     5.11     .605 No_date   28:00   41.68  n/a      .000
      {MjSysSto=.1107E-01, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00172------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                  1.0 02:S-1-FO-D1N    5.11     .605 No_date   28:00   41.68  n/a      .000
                     +       1.0 02:S-1-FO-D1J     .00     .000 No_date    0:00     .00  n/a      .000
                  SUM=       1.0 01:S-1-FO-D1S    5.11     .605 No_date   28:00   41.68  n/a      .000
R0005:C00173------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:S-1-FO-D1S     5.11     .605 No_date   28:00   41.68  n/a      .000
                out <=    1.0 01:S-1-FO-D1R     5.11     .038 No_date   29:28   41.68  n/a      .000
           overflow <=    1.0 03:S-1FOD1ovf      .00     .000 No_date    0:00     .00  n/a      .000
     {MxStoUsed=.1277E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00174------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                  1.0 02:980-out     330.38    5.026 No_date   29:21   37.71  n/a      .000
                     +       1.0 02:S-1-FO-D1R    5.11     .038 No_date   29:28   41.68  n/a      .000
                     +       1.0 02:S-1FOD1ovf     .00     .000 No_date    0:00     .00  n/a      .000
                  SUM=       1.0 01:520         335.49    5.064 No_date   29:21   37.77  n/a      .000
R0005:C00175------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:520          335.49    5.064 No_date   29:21   37.77  n/a      .000
      fname :520.0005
      remark:Total Flows at Sation 520 on Foster Drain
# Hydrograph from Node at Station 520 (Foster Drain) to Node at station 6016 (Jock River)
# Channel X-Section obtained from RVCA Hydraulic Model - Station 520
#
R0005:C00176------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:520          335.49    5.064 No_date   29:21   37.77  n/a      .000
     [RDT= 1.00] out<-    1.0 01:520-out      335.49    5.028 No_date   29:32   37.77  n/a      .000
      [L/S/n=  860./ .587/.035]
      {Vmax= 1.315:Dmax=  .603}
R0005:C00177------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-FO-F-D    14.96    1.615 No_date   28:02   41.68 .730      .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 74.0]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 316.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 36.67: SMAX=244.49: SK= .010]
R0005:C00178------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:S-1-FO-F-D    14.96    1.615 No_date   28:02   41.68  n/a      .000
     Major System   /     1.0 02:S-1FO-F-DJ      .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:S-1FO-F-DN    14.96    1.615 No_date   28:02   41.69  n/a      .000
      {MjSysSto=.8656E-02, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00179------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                  1.0 02:S-1FO-F-DJ     .00     .000 No_date    0:00     .00  n/a      .000
                     +       1.0 02:S-1FO-F-DN   14.96    1.615 No_date   28:02   41.69  n/a      .000
                  SUM=       1.0 01:S-1FO-F-DS   14.96    1.615 No_date   28:02   41.69  n/a      .000
R0005:C00180------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:S-1FO-F-DS    14.96    1.615 No_date   28:02   41.69  n/a      .000
                out <=    1.0 01:S-1FO-F-DR    14.96     .112 No_date   29:32   41.69  n/a      .000
           overflow <=    1.0 03:S-1FOFDovf      .00     .000 No_date    0:00     .00  n/a      .000
     {MxStoUsed=.3738E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00181------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-D8         5.27     .672 No_date   28:02   30.94 .542      .000
      [XIMP=.32:TIMP=.65]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI= .75:LGI= 187.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0005:C00182------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:S-1-D8         5.27     .672 No_date   28:02   30.94  n/a      .000
     Major System   /     1.0 02:S-1-D8J         .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:S-1-D8N        5.27     .672 No_date   28:02   30.94  n/a      .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00183------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                  1.0 02:S-1-D8J        .00     .000 No_date    0:00     .00  n/a      .000
                     +       1.0 02:S-1-D8N       5.27     .672 No_date   28:02   30.94  n/a      .000
                  SUM=       1.0 01:S-1-D8S       5.27     .672 No_date   28:02   30.94  n/a      .000
R0005:C00184------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:S-1-D8S        5.27     .672 No_date   28:02   30.94  n/a      .000
                out <=    1.0 01:S-1-D8R        5.27     .036 No_date   28:48   30.94  n/a      .000
           overflow <=    1.0 03:S-1-D8Rovf      .00     .000 No_date    0:00     .00  n/a      .000
     {MxStoUsed=.1197E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00185------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:S-1-A         75.88    1.479 No_date   28:37   21.69 .380      .000
      [CN= 77.0: N= 3.00: Tp=  .62]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0005:C00186------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:W_CLAR_UND    35.65     .462 No_date   29:11   21.69 .380      .000
      [CN= 77.0: N= 3.00: Tp= 1.10]
```

```
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0005:C00187------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:N_FO       53577.82   69.319 No_date   34:07   18.39  n/a     .000
                     +     1.0 02:520-out      335.49    5.028 No_date   29:32   37.77  n/a     .000
                     +     1.0 02:MS_P10        73.29    1.101 No_date   28:56   41.22  n/a     .000
                     +     1.0 02:P10-OVF         .00     .000 No_date    0:00     .00  n/a     .000
                     +     1.0 02:W_CLAR_UND    35.65     .462 No_date   29:11   21.69  n/a     .000
                     +     1.0 02:S-1FoFDovf      .00     .000 No_date    0:00     .00  n/a     .000
                     +     1.0 02:S-1FO-F-DR    14.96     .112 No_date   29:32   41.69  n/a     .000
                     +     1.0 02:S-1-D8Rovf      .00     .000 No_date    0:00     .00  n/a     .000
                     +     1.0 02:S-1-D8R        5.27     .036 No_date   28:48   30.94  n/a     .000
                     +     1.0 02:S-1-A         75.88    1.479 No_date   28:37   21.69  n/a     .000
                  SUM=     1.0 01:SN_FO      54118.36   72.161 No_date   33:44   18.55  n/a     .000
R0005:C00188------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD               1.0 01:SN_FO      54118.36   72.161 No_date   33:44   18.55  n/a     .000
      fname :SN_FO.0005
      remark:Total Flows at Foster Drain
# Hydrograph from Node Foster routed to Node at Cedarview Road
# Channel X-Section obtained from RVCA Hydraulic Model - Station 6016
#
R0005:C00189------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->     1.0 02:SN_FO      54118.36   72.161 No_date   33:44   18.55  n/a     .000
 *   [RDT= 1.00] out<-     1.0 01:N_CE       54118.36   72.088 No_date   34:08   18.55  n/a     .000
      [L/S/n=  159./ .082/.035]
      {Vmax= 1.248:Dmax= 3.107}
#****************************************************************************
#    Catchment S-1
#    - To Jock River (north and south of Jock)
#    - Primarily agricultural fields; portion of sand quarry
#****************************************************************************
R0005:C00190------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD      1.0 01:S-1-B         55.36    1.342 No_date   28:24   21.69 .380     .000
      [CN= 77.0: N= 3.00: Tp=  .45]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
#    -  JFSA 2021-02-24 change the name from S-1-BCDC to S-1-A and S-1-B. Change their TP values based on the new areas
#    -  JFSA 2021-02-24 "S-1-BCDC-1" and "S-1-BCDC-2" are not existing anymore. "S-1-BCDC-1" is part of "S-1-FO-D2" and
#    -  JFSA 2021-01-19, after adding Greenbank pond, "S-1-BCDC-3" is not existing anymore
R0005:C00191------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD    1.0 01:S-1-D1        21.67    2.409 No_date   28:02   42.00 .735     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .75:LGI= 380.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0005:C00192------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD        1.0 01:S-1-D1        21.67    2.409 No_date   28:02   42.00  n/a     .000
     Major System   /      1.0 02:S-1-D1J         .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \      1.0 03:S-1-D1N       21.67    2.409 No_date   28:02   42.01  n/a     .000
      {MjSysSto=.2250E-01, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00193------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:S-1-D1J         .00     .000 No_date    0:00     .00  n/a     .000
                     +     1.0 02:S-1-D1N       21.67    2.409 No_date   28:02   42.01  n/a     .000
                  SUM=     1.0 01:S-1-D1S       21.67    2.409 No_date   28:02   42.01  n/a     .000
R0005:C00194------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->     1.0 02:S-1-D1S       21.67    2.409 No_date   28:02   42.01  n/a     .000
                 out <=    1.0 01:S-1-D1R       21.67     .164 No_date   29:24   42.01  n/a     .000
            overflow <=    1.0 03:S-1-D1Rovf      .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.5470E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00195------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD    1.0 01:S-1-D4         3.28     .421 No_date   28:00   42.00 .735     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .75:LGI= 148.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0005:C00196------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD        1.0 01:S-1-D4         3.28     .421 No_date   28:00   42.00  n/a     .000
     Major System   /      1.0 02:S-1-D4J         .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \      1.0 03:S-1-D4N        3.28     .421 No_date   28:00   42.01  n/a     .000
      {MjSysSto=.1821E-01, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00197------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:S-1-D4J         .00     .000 No_date    0:00     .00  n/a     .000
                     +     1.0 02:S-1-D4N        3.28     .421 No_date   28:00   42.01  n/a     .000
                  SUM=     1.0 01:S-1-D4S        3.28     .421 No_date   28:00   42.01  n/a     .000
R0005:C00198------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->     1.0 02:S-1-D4S        3.28     .421 No_date   28:00   42.01  n/a     .000
                 out <=    1.0 01:S-1-D4R        3.28     .025 No_date   29:15   42.01  n/a     .000
            overflow <=    1.0 03:S-1-D4Rovf      .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.8289E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00199------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD    1.0 01:S-1-D5        12.84    1.500 No_date   28:01   42.00 .735     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .75:LGI= 293.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0005:C00200------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD        1.0 01:S-1-D5        12.84    1.500 No_date   28:01   42.00  n/a     .000
     Major System   /      1.0 02:S-1-D5J         .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \      1.0 03:S-1-D5N       12.84    1.500 No_date   28:02   42.00  n/a     .000
      {MjSysSto=.1838E-01, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00201------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:S-1-D5J         .00     .000 No_date    0:00     .00  n/a     .000
                     +     1.0 02:S-1-D5N       12.84    1.500 No_date   28:01   42.00  n/a     .000
                  SUM=     1.0 01:S-1-D5S       12.84    1.500 No_date   28:01   42.00  n/a     .000
R0005:C00202------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->     1.0 02:S-1-D5S       12.84    1.500 No_date   28:01   42.00  n/a     .000
                 out <=    1.0 01:S-1-D5R       12.84     .097 No_date   29:21   42.00  n/a     .000
            overflow <=    1.0 03:S-1-D5Rovf      .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.3242E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00203------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD    1.0 01:S-1-D6         1.75     .232 No_date   28:00   42.00 .735     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .75:LGI= 108.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0005:C00204------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD        1.0 01:S-1-D6         1.75     .232 No_date   28:00   42.00  n/a     .000
     Major System   /      1.0 02:S-1-D6J         .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \      1.0 03:S-1-D6N        1.75     .232 No_date   28:00   42.00  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00205------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:S-1-D6J         .00     .000 No_date    0:00     .00  n/a     .000
                     +     1.0 02:S-1-D6N        1.75     .232 No_date   28:00   42.00  n/a     .000
                  SUM=     1.0 01:S-1-D6S        1.75     .232 No_date   28:00   42.00  n/a     .000
R0005:C00206------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->     1.0 02:S-1-D6S        1.75     .232 No_date   28:00   42.00  n/a     .000
                 out <=    1.0 01:S-1-D6R        1.75     .013 No_date   29:13   42.00  n/a     .000
            overflow <=    1.0 03:S-1-D6Rovf      .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.4422E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00207------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD    1.0 01:S-1-D7         2.03     .265 No_date   28:00   42.00 .735     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .75:LGI= 116.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0005:C00208------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD        1.0 01:S-1-D7         2.03     .265 No_date   28:00   42.00  n/a     .000
     Major System   /      1.0 02:S-1-D7J         .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \      1.0 03:S-1-D7N        2.03     .265 No_date   28:00   42.02  n/a     .000
      {MjSysSto=.7775E-02, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00209------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:S-1-D7J         .00     .000 No_date    0:00     .00  n/a     .000
                     +     1.0 02:S-1-D7N        2.03     .265 No_date   28:00   42.02  n/a     .000
                  SUM=     1.0 01:S-1-D7S        2.03     .265 No_date   28:00   42.02  n/a     .000
R0005:C00210------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->     1.0 02:S-1-D7S        2.03     .265 No_date   28:00   42.02  n/a     .000
                 out <=    1.0 01:S-1-D7R        2.03     .015 No_date   29:14   42.01  n/a     .000
            overflow <=    1.0 03:S-1-D7Rovf      .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.5131E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
#    Catchment W_CLAR
#    - To West Clarke Drain (south of the Jock)
#    - Subdivision with 43% imp. as per Barrhaven South MSS
#    - 2020-11-30 update CLARKE Tributary Drainage Area to  = 121 ha based on P598(04)-11
#    - 2020-11-30 split CLARKE Drainage Area to MAJOR and ALL
#****************************************************************************
R0005:C00211------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD    1.0 01:W_CLAR_MJ      1.77     .192 No_date   28:00   37.36 .654     .000
      [XIMP=.46:TIMP=.59]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 109.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
# 5-Year + 12% Capture
R0005:C00212------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->     1.0 02:W_CLAR_MJ      1.77     .192 No_date   28:00   37.36  n/a     .000
                 out <=    1.0 01:W_CLAR_MJn     1.77     .192 No_date   28:00   37.36  n/a     .000
            overflow <=    1.0 03:W_CLAR_MJj      .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.9116E-04  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00213------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD    1.0 01:W_CLAR_ALL   119.40   10.597 No_date   28:05   41.22 .722     .000
      [XIMP=.60:TIMP=.65]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 892.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0005:C00214------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:W_CLAR_ALL   119.40   10.597 No_date   28:05   41.22  n/a     .000
                     +     1.0 02:W_CLAR_MJj      .00     .000 No_date    0:00     .00  n/a     .000
                  SUM=     1.0 01:W_CLAR       119.40   10.597 No_date   28:05   41.22  n/a     .000
R0005:C00215------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD               1.0 01:W_CLAR       119.40   10.597 No_date   28:05   41.22  n/a     .000
      fname :W_CLAR.0005
      remark:Total Flows to West Clarke
#****************************************************************************
#    West Clarke Pond 2
#    - Rating curve obtained from Barrhaven South MSS modeling
#    - Tributary Drainage Area to MSS Pond 2 = 241 ha
#****************************************************************************
R0005:C00216------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->     1.0 02:W_CLAR       119.40   10.597 No_date   28:05   41.22  n/a     .000
                 out <=    1.0 01:MS_P2        119.40    1.795 No_date   28:54   41.22  n/a     .000
            overflow <=    1.0 03:P2-OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.2665E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
#****************************************************************************
R0005:C00217------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:N_CE       54118.36   72.088 No_date   34:08   18.55  n/a     .000
                     +     1.0 02:S-1-D4R        3.28     .025 No_date   29:15   42.01  n/a     .000
                     +     1.0 02:S-1-D5R       12.84     .097 No_date   29:21   42.00  n/a     .000
                     +     1.0 02:S-1-D4Rovf      .00     .000 No_date    0:00     .00  n/a     .000
                     +     1.0 02:S-1-D5Rovf      .00     .000 No_date    0:00     .00  n/a     .000
                     +     1.0 02:MS_P2        119.40    1.795 No_date   28:54   41.22  n/a     .000
                     +     1.0 02:P2-OVF          .00     .000 No_date    0:00     .00  n/a     .000
                  SUM=     1.0 01:SN_CE      54253.88   72.881 No_date   33:45   18.61  n/a     .000
R0005:C00218------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD               1.0 01:SN_CE      54253.88   72.881 No_date   33:45   18.61  n/a     .000
      fname :SN_CE.0005
      remark:Total Flows before Station 5737 on Jock River
# Channel X-Section obtained from RVCA Hydraulic Model - Station 5737
# 2021-02-25 add station 5737 before station 5002. Station 5737 was extracted from the HEC-RAS model T:\PROJ\1474-16\Des
# JFSA 2021-03-02  change the slope to 0.0175% instead of 0.02593 to stabilize the model
R0005:C00219------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->     1.0 02:SN_CE      54253.88   72.881 No_date   33:45   18.61  n/a     .000
 *   [RDT= 1.00] out<-     1.0 01:5737       54253.88   69.631 No_date   36:44   18.61  n/a     .000
      [L/S/n=  270./ .018/.035]
      {Vmax=  .687:Dmax= 4.083}
R0005:C00220------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:5737       54253.88   69.631 No_date   36:44   18.61  n/a     .000
                     +     1.0 02:S-1-D1R       21.67     .164 No_date   29:24   42.01  n/a     .000
                     +     1.0 02:S-1-D6R        1.75     .013 No_date   29:13   42.00  n/a     .000
                     +     1.0 02:S-1-D7R        2.03     .015 No_date   29:14   42.01  n/a     .000
                     +     1.0 02:S-1-D1Rovf      .00     .000 No_date    0:00     .00  n/a     .000
                     +     1.0 02:S-1-D6Rovf      .00     .000 No_date    0:00     .00  n/a     .000
                     +     1.0 02:S-1-D7Rovf      .00     .000 No_date    0:00     .00  n/a     .000
                  SUM=     1.0 01:5002       54279.33   69.760 No_date   36:44   18.62  n/a     .000
R0005:C00221------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD               1.0 01:5002       54279.33   69.760 No_date   36:44   18.62  n/a     .000
      fname :5002.0005
      remark:Total Flows before Station 5002 on Jock River
# Hydrograph from Node Cedarview Road routed to Node at West Clarke Drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 5002
# JFSA 2021-02-19 Change the slope from 0.01 % (as per Stantec Report 2007) to 0.0255 % so the model will be more stable
# JFSA 2021-02-19 Change to three ROUTE CHANNEL with length 275 m each instead of one with 825 m length so the model wil
# JFSA 2021-02-26 change the length of 5002 route channel from 825 m to 736 m. That is because of adding station 5737 be
R0005:C00222------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->     1.0 02:5002       54279.33   69.760 No_date   36:44   18.62  n/a     .000
     [RDT= 1.00] out<-     1.0 01:N_WCa      54279.33   69.764 No_date   36:42   18.62  n/a     .000
      [L/S/n=  245./ .095/.035]
      {Vmax= 1.068:Dmax= 2.322}
R0005:C00223------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->     1.0 02:N_WCa      54279.33   69.764 No_date   36:42   18.62  n/a     .000
     [RDT= 1.00] out<-     1.0 01:N_WCb      54279.33   69.804 No_date   36:35   18.62  n/a     .000
      [L/S/n=  245./ .095/.035]
      {Vmax= 1.068:Dmax= 2.322}
R0005:C00224------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->     1.0 02:N_WCb      54279.33   69.804 No_date   36:35   18.62  n/a     .000
     [RDT= 1.00] out<-     1.0 01:N_WC       54279.33   70.173 No_date   36:31   18.62  n/a     .000
      [L/S/n=  245./ .095/.035]
      {Vmax= 1.068:Dmax= 2.323}
#****************************************************************************
# Hydrograph from Node West Clarke routed to Node at Kennedy - Burnett Drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 4534
#
R0005:C00225------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->     1.0 02:N_WC       54279.33   70.173 No_date   36:31   18.62  n/a     .000
     [RDT= 1.00] out<-     1.0 01:N_KB       54279.33   69.932 No_date   36:32   18.62  n/a     .000
      [L/S/n= 1020./ .050/.035]
      {Vmax=  .947:Dmax= 2.863}
#****************************************************************************
#    Catchment KEN_BU
#    - To Kennedy-Burnett SWM Facility
#    - Outlets to Fraser-Clarke drain (north of the Jock)
#    - Medium density residential subdivision
#****************************************************************************
#****************************************************************************
#   Existing Kennedy-Burnett SWM Facility
#    - Rating curve obtained from URTKBP
#    - Tributary Drainage Area to Pond = 160 ha
#****************************************************************************
R0005:C00226------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD    1.0 01:KB-01A        40.82    2.624 No_date   28:14   20.08 .351     .000
      [XIMP=.10:TIMP=.40]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI= .50:LGI= 522.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0005:C00227------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD        1.0 01:KB-01A        40.82    2.624 No_date   28:14   20.08  n/a     .000
     Major System   /      1.0 02:KB-01A-MJ       .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \      1.0 03:KB-01A-MN     40.82    2.624 No_date   28:14   20.08  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00228------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:KB-01A-MJ       .00     .000 No_date    0:00     .00  n/a     .000
                     +     1.0 02:KB-01A-MN     40.82    2.624 No_date   28:14   20.08  n/a     .000
                  SUM=     1.0 01:KB-01A-S      40.82    2.624 No_date   28:14   20.08  n/a     .000
R0005:C00229------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD    1.0 01:KB-01B        31.10    1.779 No_date   28:08   22.42 .393     .000
      [XIMP=.19:TIMP=.38]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .42:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI= .42:LGI= 455.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0005:C00230------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD        1.0 01:KB-01B        31.10    1.779 No_date   28:08   22.42  n/a     .000
     Major System   /      1.0 02:KB-01B-MJ       .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \      1.0 03:KB-01B-MN     31.10    1.585 No_date   28:03   22.52  n/a     .000
      {MjSysSto=.1530E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00231------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:KB-01B-MJ       .00     .000 No_date    0:00     .00  n/a     .000
                     +     1.0 02:KB-01B-MN     31.10    1.585 No_date   28:03   22.52  n/a     .000
                  SUM=     1.0 01:KB-01B-S      31.10    1.585 No_date   28:03   22.52  n/a     .000
R0005:C00232------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD    1.0 01:KB-01C        13.78    1.235 No_date   28:05   23.43 .410     .000
      [XIMP=.20:TIMP=.41]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI= .50:LGI= 303.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0005:C00233------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD        1.0 01:KB-01C        13.78    1.235 No_date   28:05   23.43  n/a     .000
     Major System   /      1.0 02:KB-01C-MJ       .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \      1.0 03:KB-01C-MN     13.78    1.235 No_date   28:05   23.43  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00234------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:KB-01C-MJ       .00     .000 No_date    0:00     .00  n/a     .000
                     +     1.0 02:KB-01C-MN     13.78    1.235 No_date   28:05   23.43  n/a     .000
                  SUM=     1.0 01:KB-01C-S      13.78    1.235 No_date   28:05   23.43  n/a     .000
R0005:C00235------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD    1.0 01:KB-03         84.78    6.180 No_date   28:10   22.99 .402     .000
      [XIMP=.20:TIMP=.39]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI= .63:LGI= 752.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0005:C00236------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD        1.0 01:KB-03         84.78    6.180 No_date   28:10   22.99  n/a     .000
     Major System   /      1.0 02:KB-03-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \      1.0 03:KB-03-MN      84.78    5.270 No_date   28:03   23.12  n/a     .000
      {MjSysSto=.5145E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00237------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:KB-03-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                     +     1.0 02:KB-03-MN      84.78    5.270 No_date   28:03   23.12  n/a     .000
                  SUM=     1.0 01:KB-03-S       84.78    5.270 No_date   28:03   23.12  n/a     .000
R0005:C00238------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD    1.0 01:KB-04          6.95    1.043 No_date   28:01   49.53 .867     .000
      [XIMP=.85:TIMP=.85]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .94:SLPI= .50:LGI= 215.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0005:C00239------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD        1.0 01:KB-04          6.95    1.043 No_date   28:01   49.53  n/a     .000
     Major System   /      1.0 02:KB-04-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \      1.0 03:KB-04-MN       6.95     .503 No_date   27:48   49.78  n/a     .000
      {MjSysSto=.3742E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00240------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:KB-04-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                     +     1.0 02:KB-04-MN       6.95     .503 No_date   27:48   49.78  n/a     .000
                  SUM=     1.0 01:KB-04-S        6.95     .503 No_date   27:48   49.78  n/a     .000
R0005:C00241------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD    1.0 01:KB-05          5.19     .855 No_date   28:00   52.49 .919     .000
      [XIMP=.93:TIMP=.93]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 186.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0005:C00242------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD    1.0 01:KB-06         12.93    2.190 No_date   28:00   50.55 .885     .000
      [XIMP=.87:TIMP=.87]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .94:SLPI=4.75:LGI= 294.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0005:C00243------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD        1.0 01:KB-06         12.93    2.190 No_date   28:00   50.55  n/a     .000
     Major System   /      1.0 02:KB-06-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \      1.0 03:KB-06-MN      12.93    2.190 No_date   28:00   50.55  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00244------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:KB-06-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                     +     1.0 02:KB-06-MN      12.93    2.190 No_date   28:00   50.55  n/a     .000
                  SUM=     1.0 01:KB-06-S       12.93    2.190 No_date   28:00   50.55  n/a     .000
R0005:C00245------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
```

```
    CONTINUOUS STANDHYD   1.0 01:KB-11          4.03     .584 No_date   28:00   41.88 .733     .000
      [XIMP=.68:TIMP=.68]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI=2.00:LGI= 164.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0005:C00246------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-11          4.03     .584 No_date   28:00   41.88  n/a      .000
     Major System   /     1.0 02:KB-11-MJ        .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:KB-11-MN       4.03     .577 No_date   28:00   41.89  n/a      .000
      {MjSysSto=.4277E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00247------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-11-MJ        .00     .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:KB-11-MN       4.03     .577 No_date   28:00   41.89  n/a      .000
                 SUM=     1.0 01:KB-11-S        4.03     .577 No_date   28:00   41.89  n/a      .000
R0005:C00248------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S1             4.99     .892 No_date   28:00   52.49 .919     .000
      [XIMP=.93:TIMP=.93]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=2.00:LGI= 182.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0005:C00249------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-15          2.15     .321 No_date   28:00   47.49 .831     .000
      [XIMP=.79:TIMP=.79]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .16:SLPI= .30:LGI= 120.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0005:C00250------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-01A-S      40.82    2.624 No_date   28:14   20.08  n/a      .000
                    +     1.0 02:KB-01B-S      31.10    1.585 No_date   28:03   22.52  n/a      .000
                    +     1.0 02:KB-01C-S      13.78    1.235 No_date   28:05   23.43  n/a      .000
                    +     1.0 02:KB-03-S       84.78    5.270 No_date   28:03   23.12  n/a      .000
                    +     1.0 02:KB-04-S        6.95     .503 No_date   27:48   49.78  n/a      .000
                    +     1.0 02:KB-05          5.19     .855 No_date   28:00   52.49  n/a      .000
                    +     1.0 02:KB-06-S       12.93    2.190 No_date   28:00   50.55  n/a      .000
                    +     1.0 02:KB-11-S        4.03     .577 No_date   28:00   41.89  n/a      .000
                    +     1.0 02:KB-15          2.15     .321 No_date   28:00   47.49  n/a      .000
                    +     1.0 02:S1             4.99     .892 No_date   28:00   52.49  n/a      .000
                 SUM=     1.0 01:KB-P1        206.72   14.564 No_date   28:02   27.13  n/a      .000
R0005:C00251------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:KB-P1        206.72   14.564 No_date   28:02   27.13  n/a      .000
                 out <=   1.0 01:KB-P1R       206.72   11.746 No_date   28:15   27.13  n/a      .000
            overflow <=   1.0 03:KB-P1ovf        .00     .000 No_date    0:00     .00  n/a      .000
     {MxStoUsed=.5868E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00252------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-P1R       206.72   11.746 No_date   28:15   27.13  n/a      .000
                    +     1.0 02:KB-P1ovf        .00     .000 No_date    0:00     .00  n/a      .000
                 SUM=     1.0 01:KB-Pond1     206.72   11.746 No_date   28:15   27.13  n/a      .000
R0005:C00253------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:KB-Pond1     206.72   11.746 No_date   28:15   27.13  n/a      .000
      fname :KB-Pond1.0005
      remark:Total Flows at KB first pond
R0005:C00254------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-07         10.86    1.770 No_date   28:00   50.11 .877     .000
      [XIMP=.86:TIMP=.86]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI=2.00:LGI= 269.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0005:C00255------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-07         10.86    1.770 No_date   28:00   50.11  n/a      .000
     Major System   /     1.0 02:KB-07-MJ        .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:KB-07-MN      10.86    1.770 No_date   28:00   50.11  n/a      .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00256------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-07-MJ        .00     .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:KB-07-MN      10.86    1.770 No_date   28:00   50.11  n/a      .000
                 SUM=     1.0 01:KB-07-S       10.86    1.770 No_date   28:00   50.11  n/a      .000
R0005:C00257------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-08          6.61     .900 No_date   28:00   40.32 .706     .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI=2.00:LGI= 210.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0005:C00258------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-08          6.61     .900 No_date   28:00   40.32  n/a      .000
     Major System   /     1.0 02:KB-08-MJ        .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:KB-08-MN       6.61     .900 No_date   28:00   40.32  n/a      .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00259------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-08-MJ        .00     .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:KB-08-MN       6.61     .900 No_date   28:00   40.32  n/a      .000
                 SUM=     1.0 01:KB-08-S        6.61     .900 No_date   28:00   40.32  n/a      .000
R0005:C00260------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-09          2.60     .448 No_date   28:00   49.44 .865     .000
      [XIMP=.86:TIMP=.86]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=2.00:LGI= 132.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0005:C00261------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-10_1        2.37     .409 No_date   28:00   49.44 .865     .000
      [XIMP=.86:TIMP=.86]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=2.00:LGI= 126.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0005:C00262------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-10_2        1.14     .199 No_date   28:00   49.44 .865     .000
      [XIMP=.86:TIMP=.86]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=2.00:LGI=  87.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0005:C00263------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-12          4.86     .777 No_date   28:00   46.75 .818     .000
      [XIMP=.79:TIMP=.79]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.10:SLPI=2.00:LGI= 180.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0005:C00264------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-12          4.86     .777 No_date   28:00   46.75  n/a      .000
     Major System   /     1.0 02:KB-12-MJ        .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:KB-12-MN       4.86     .777 No_date   28:00   46.75  n/a      .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00265------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-12-MJ        .00     .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:KB-12-MN       4.86     .777 No_date   28:00   46.75  n/a      .000
                 SUM=     1.0 01:KB-12-S        4.86     .777 No_date   28:00   46.75  n/a      .000
R0005:C00266------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-13         10.19    1.364 No_date   28:00   40.32 .706     .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI=2.00:LGI= 261.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0005:C00267------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-13         10.19    1.364 No_date   28:00   40.32  n/a      .000
     Major System   /     1.0 02:KB-13-MJ        .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:KB-13-MN      10.19    1.364 No_date   28:00   40.32  n/a      .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00268------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-13-MJ        .00     .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:KB-13-MN      10.19    1.364 No_date   28:00   40.32  n/a      .000
                 SUM=     1.0 01:KB-13-S       10.19    1.364 No_date   28:00   40.32  n/a      .000
R0005:C00269------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-14          5.47     .756 No_date   28:00   40.32 .706     .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI=2.00:LGI= 191.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0005:C00270------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-14          5.47     .756 No_date   28:00   40.32  n/a      .000
     Major System   /     1.0 02:KB-14-MJ        .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:KB-14-MN       5.47     .756 No_date   28:00   40.32  n/a      .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00271------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-14-MJ        .00     .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:KB-14-MN       5.47     .756 No_date   28:00   40.32  n/a      .000
                 SUM=     1.0 01:KB-14-S        5.47     .756 No_date   28:00   40.32  n/a      .000
R0005:C00272------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-16_2        3.42     .462 No_date   28:01   43.88 .768     .000
      [XIMP=.71:TIMP=.71]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .16:SLPI= .30:LGI= 151.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0005:C00273------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-Pond1     206.72   11.746 No_date   28:15   27.13  n/a      .000
                    +     1.0 02:KB-07-S       10.86    1.770 No_date   28:00   50.11  n/a      .000
                    +     1.0 02:KB-08-S        6.61     .900 No_date   28:00   40.32  n/a      .000
                    +     1.0 02:KB-09          2.60     .448 No_date   28:00   49.44  n/a      .000
                    +     1.0 02:KB-10_1        2.37     .409 No_date   28:00   49.43  n/a      .000
                    +     1.0 02:KB-10_2        1.14     .199 No_date   28:00   49.44  n/a      .000
                    +     1.0 02:KB-12-S        4.86     .777 No_date   28:00   46.75  n/a      .000
                    +     1.0 02:KB-13-S       10.19    1.364 No_date   28:00   40.32  n/a      .000
                    +     1.0 02:KB-14-S        5.47     .756 No_date   28:00   40.32  n/a      .000
                    +     1.0 02:KB-16_2        3.42     .462 No_date   28:01   43.88  n/a      .000
                 SUM=     1.0 01:KB-P2        254.24   16.750 No_date   28:01   30.40  n/a      .000
R0005:C00274------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:KB-P2        254.24   16.750 No_date   28:01   30.40  n/a      .000
                 out <=   1.0 01:KB-P2R       254.24   13.525 No_date   28:14   30.40  n/a      .000
            overflow <=   1.0 03:KB-P2ovf        .00     .000 No_date    0:00     .00  n/a      .000
     {MxStoUsed=.6552E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00275------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-P2R       254.24   13.525 No_date   28:14   30.40  n/a      .000
                    +     1.0 02:KB-P2ovf        .00     .000 No_date    0:00     .00  n/a      .000
                 SUM=     1.0 01:KB-Pond2     254.24   13.525 No_date   28:14   30.40  n/a      .000
R0005:C00276------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:KB-Pond2     254.24   13.525 No_date   28:14   30.40  n/a      .000
      fname :KB-Pond2.0005
      remark:Total Flows at KB second pond
R0005:C00277------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-16_1        2.80     .398 No_date   28:01   45.69 .800     .000
      [XIMP=.75:TIMP=.75]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .16:SLPI= .30:LGI= 137.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0005:C00278------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-Pond2     254.24   13.525 No_date   28:14   30.40  n/a      .000
                    +     1.0 02:KB-16_1        2.80     .398 No_date   28:01   45.69  n/a      .000
                 SUM=     1.0 01:KB-P3        257.04   13.655 No_date   28:13   30.57  n/a      .000
R0005:C00279------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:KB-P3        257.04   13.655 No_date   28:13   30.57  n/a      .000
                 out <=   1.0 01:KB-P3R        14.18     .051 No_date   17:43   30.57  n/a      .000
            overflow <=   1.0 03:KB-P3ovf     242.86   13.603 No_date   28:13   30.57  n/a      .000
     {MxStoUsed=.1998E-02  m3, TotOvfVol=.7424E+01  m3, N-Ovf=    2, TotDurOvf=   23.hrs}
R0005:C00280------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-P3R        14.18     .051 No_date   17:43   30.57  n/a      .000
                    +     1.0 02:KB-P3ovf     242.86   13.603 No_date   28:13   30.57  n/a      .000
                 SUM=     1.0 01:KB-Pond3     257.04   13.654 No_date   28:13   30.57  n/a      .000
R0005:C00281------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:KB-Pond3     257.04   13.654 No_date   28:13   30.57  n/a      .000
      fname :KB-Pond3.0005
      remark:Total Flows at KB third pond
#*****************************************************************************
#    EXISTING / PROPOSED Subcatchments (Kennedy-Burnett SWM Facility (118080), SWM Modeling Approach, NOVATECH Report Ju
#    - TO FRASER-CLARKE DRAIN
#*****************************************************************************
R0005:C00282------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:FC-01          8.03     .865 No_date   28:01   32.39 .567     .000
      [XIMP=.47:TIMP=.47]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 231.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0005:C00283------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:FC-01          8.03     .865 No_date   28:01   32.39  n/a      .000
     Major System   /     1.0 02:FC-01-MJ        .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:FC-01-MN       8.03     .756 No_date   27:58   32.40  n/a      .000
      {MjSysSto=.2912E+02, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00284------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:FC-01-MJ        .00     .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:FC-01-MN       8.03     .756 No_date   27:58   32.40  n/a      .000
                 SUM=     1.0 01:FC-01-S        8.03     .756 No_date   27:58   32.40  n/a      .000
R0005:C00285------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:FC-02         16.05    2.547 No_date   28:01   52.49 .919     .000
      [XIMP=.93:TIMP=.93]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 327.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0005:C00286------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:FC-02         16.05    2.547 No_date   28:01   52.49  n/a      .000
     Major System   /     1.0 02:FC-02-MJ        .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:FC-02-MN      16.05    1.159 No_date   27:47   52.68  n/a      .000
      {MjSysSto=.1011E+04, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00287------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:FC-02-MJ        .00     .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:FC-02-MN      16.05    1.159 No_date   27:47   52.68  n/a      .000
                 SUM=     1.0 01:FC-02-S       16.05    1.159 No_date   27:47   52.68  n/a      .000
R0005:C00288------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:FC-03          7.37     .956 No_date   28:01   39.82 .697     .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 222.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0005:C00289------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:FC-03          7.37     .956 No_date   28:01   39.82  n/a      .000
     Major System   /     1.0 02:FC-03-MJ        .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:FC-03-MN       7.37     .358 No_date   27:45   39.85  n/a      .000
      {MjSysSto=.4806E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00290------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:FC-03-MJ        .00     .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:FC-03-MN       7.37     .358 No_date   27:45   39.85  n/a      .000
                 SUM=     1.0 01:FC-03-S        7.37     .358 No_date   27:45   39.85  n/a      .000
R0005:C00291------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:FC-04         12.87    1.600 No_date   28:01   39.82 .697     .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 293.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0005:C00292------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:FC-04         12.87    1.600 No_date   28:01   39.82  n/a      .000
     Major System   /     1.0 02:FC-04-MJ        .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:FC-04-MN      12.87     .741 No_date   27:48   39.85  n/a      .000
      {MjSysSto=.6277E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00293------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:FC-04-MJ        .00     .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:FC-04-MN      12.87     .741 No_date   27:48   39.85  n/a      .000
                 SUM=     1.0 01:FC-04-S       12.87     .741 No_date   27:48   39.85  n/a      .000
#*****************************************************************************
#    PROPOSED Subcatchments (Kennedy-Burnett SWM Facility (118080), SWM Modeling Approach, NOVATECH Report June, 2020)
#    - TO JOCK RIVER
#*****************************************************************************
R0005:C00294------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:JR-01          8.24    1.064 No_date   28:01   39.82 .697     .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 234.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0005:C00295------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:JR-01          8.24    1.064 No_date   28:01   39.82  n/a      .000
     Major System   /     1.0 02:JR-01-MJ        .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:JR-01-MN       8.24     .563 No_date   28:29   40.05  n/a      .000
      {MjSysSto=.3052E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00296------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:JR-01-MJ        .00     .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:JR-01-MN       8.24     .563 No_date   27:50   40.05  n/a      .000
                 SUM=     1.0 01:JR-01-S        8.24     .563 No_date   27:50   40.05  n/a      .000
R0005:C00297------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:JR-02          1.59     .224 No_date   28:00   39.82 .697     .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 103.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0005:C00298------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:JR-02          1.59     .224 No_date   28:00   39.82  n/a      .000
     Major System   /     1.0 02:JR-02-MJ        .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:JR-02-MN       1.59     .153 No_date   27:53   40.12  n/a      .000
      {MjSysSto=.2948E+02, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00299------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:JR-02-MJ        .00     .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:JR-02-MN       1.59     .153 No_date   27:53   40.12  n/a      .000
                 SUM=     1.0 01:JR-02-S        1.59     .153 No_date   27:53   40.12  n/a      .000
#*****************************************************************************
#    Catchment FRASER
#    - To Fraser-Clarke drain (north of the Jock)
#    - Developed land with assumed 43% imp.
#    - 2020-12-17 Change Fraser area to be 35.1 as measured from QGIS
#    - 2020-12-17 All Fraser is undeveloped (Nashyd)
#*****************************************************************************
R0005:C00300------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:FRASER-DRN    13.65     .345 No_date   28:22   21.69 .380     .000
      [CN= 77.0: N= 3.00: Tp=  .43]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0005:C00301------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:FRASER-D      21.61    2.281 No_date   28:02   40.72 .713     .000
      [XIMP=.58:TIMP=.58]
      [LOSS= 2 :CN= 80.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 380.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 26.32: SMAX=175.50: SK= .010]
R0005:C00302------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:FRASER-D      21.61    2.281 No_date   28:02   40.72  n/a      .000
     Major System   /     1.0 02:FRASER-J        .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:FRASER-N      21.61    2.281 No_date   28:02   40.73  n/a      .000
      {MjSysSto=.2000E-01, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00303------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:FRASER-J        .00     .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:FRASER-N      21.61    2.281 No_date   28:02   40.73  n/a      .000
                 SUM=     1.0 01:FRASER-S      21.61    2.281 No_date   28:02   40.73  n/a      .000
R0005:C00304------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-Pond3     257.04   13.654 No_date   28:13   30.57  n/a      .000
                    +     1.0 02:S-1-B         55.36    1.342 No_date   28:24   21.69  n/a      .000
                    +     1.0 02:FRASER-DRN    13.65     .345 No_date   28:22   21.69  n/a      .000
                    +     1.0 02:FRASER-S      21.61    2.281 No_date   28:02   40.73  n/a      .000
                    +     1.0 02:N_KB       54279.33   69.932 No_date   36:32   18.62  n/a      .000
                    +     1.0 02:FC-01-S        8.03     .756 No_date   27:58   32.40  n/a      .000
                    +     1.0 02:FC-02-S       16.05    1.159 No_date   27:47   52.68  n/a      .000
                    +     1.0 02:FC-03-S        7.37     .358 No_date   27:45   39.85  n/a      .000
                 SUM=     1.0 01:4241       54658.44   70.340 No_date   36:32   18.70  n/a      .000
R0005:C00305------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:4241       54658.44   70.340 No_date   36:32   18.70  n/a      .000
      fname :4241.0005
      remark:Total Flows at Ken-Burnett Outlet
# Hydrograph from Node Ken-Burnett to station 3633
# Channel X-Section obtained from RVCA Hydraulic Model - Station 4241
#
R0005:C00306------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:4241       54658.44   70.340 No_date   36:32   18.70  n/a      .000
     [RDT= 1.00] out<-    1.0 01:4241-out   54658.44   70.314 No_date   38:13   18.70  n/a      .000
      [L/S/n=  294./ .109/.035]
      {Vmax= 1.098:Dmax= 1.834}
R0005:C00307------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:4241-out   54658.44   70.314 No_date   38:13   18.70  n/a      .000
                    +     1.0 02:FC-04-S       12.87     .741 No_date   27:48   39.85  n/a      .000
                    +     1.0 02:JR-01-S        8.24     .563 No_date   27:50   40.05  n/a      .000
                    +     1.0 02:JR-02-S        1.59     .153 No_date   27:53   40.12  n/a      .000
                 SUM=     1.0 01:SN_KB      54681.13   70.342 No_date   38:13   18.71  n/a      .000
R0005:C00308------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_KB      54681.13   70.342 No_date   38:13   18.71  n/a      .000
```

```
      fname :SN_KB.0005
      remark:Total Flows before Station 3633
# Hydrograph from Station 3633 to Node Todd
# Channel X-Section obtained from RVCA Hydraulic Model - Station 3633
# JFSA 2021-02-26 change the channel length (at station 3633) from 650m to 608m and change the slope from 0.0498% to 0.2
#
R0005:C00309------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_KB      54681.13   70.342 No_date   38:13   18.71  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N_TO       54681.13   70.065 No_date   36:56   18.71  n/a     .000
      [L/S/n=  608./ .247/.035]
      {Vmax= 1.451:Dmax= 1.378}
#*****************************************************************************
#    Catchment Greenbank
#    - To Greenbank Drain (south of the Jock)
#    - JFSA 2021-01-18 add Greenbank pond as per JFSA, P598(06)-15, June 2016
#    - JFSA 2021-01-19 update area from 37.479 ha to 36.6 ha based on GIS measurements
#*****************************************************************************
R0005:C00310------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:Greenbank     36.60    3.925 No_date   28:02   42.59 .745     .000
      [XIMP=.64:TIMP=.68]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 494.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0005:C00311------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:Greenbank     36.60    3.925 No_date   28:02   42.59  n/a     .000
                out <=    1.0 01:GreenB_MN     36.60     .811 No_date   28:35   42.58  n/a     .000
           overflow <=    1.0 03:GreenB_MJ       .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.7695E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00312------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N_TO       54681.13   70.065 No_date   36:56   18.71  n/a     .000
                    +     1.0 02:GreenB_MJ       .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:GreenB_MN     36.60     .811 No_date   28:35   42.58  n/a     .000
                 SUM=     1.0 01:GreenB     54717.73   70.171 No_date   36:56   18.73  n/a     .000
R0005:C00313------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:GreenB     54717.73   70.171 No_date   36:56   18.73  n/a     .000
      fname :GreenB.0005
      remark:Total Flows at Greenbank Drain
#*****************************************************************************
#    Catchment TODD
#    - To Todd Drain (south of the Jock)
#    - Subdivision with 43% imp. as per Barrhaven South MSS
#    - 2020-11-30 increase imp. based on P598(04)-11
#    - 2020-11-30 update TODD Tributary Drainage Area to  = 146.015 ha based on P598(04)-11
#    - 2020-11-30 split TODD Drainage Area to MAJOR, MINOR, POND and ALL
#*****************************************************************************
#    - JFSA 2021-01-19 add "TODD_MN1" as part of Clarke("W_CLAR_MJ") and remove it from Todd
R0005:C00314------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:TODD_MN2       2.10     .239 No_date   28:00   38.41 .672     .000
      [XIMP=.53:TIMP=.57]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 118.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0005:C00315------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:TODD_MN3        .12     .014 No_date   28:00   38.39 .672     .000
      [XIMP=.53:TIMP=.57]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI=  28.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0005:C00316------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:TODD_MJ       30.23    2.959 No_date   28:02   39.47 .691     .000
      [XIMP=.52:TIMP=.64]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 449.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0005:C00317------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:TODD_ALL     112.91    9.069 No_date   28:05   38.19 .669     .000
      [XIMP=.52:TIMP=.57]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 868.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0005:C00318------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:TODD_P         3.06     .385 No_date   28:00   41.58 .728     .000
      [XIMP=.63:TIMP=.63]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 143.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
# 5-Year + 12% Capture
R0005:C00319------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:TODD_MJ       30.23    2.959 No_date   28:02   39.47  n/a     .000
 *              out <=    1.0 01:TODD_MJn      30.23    2.959 No_date   28:02   39.47  n/a     .000
           overflow <=    1.0 03:TODD_MJj        .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.8948E-04  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
# 5-Year + 12% Capture
R0005:C00320------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:TODD_MN2       2.10     .239 No_date   28:00   38.41  n/a     .000
                out <=    1.0 01:TODD_MN2n      2.10     .238 No_date   28:00   38.41  n/a     .000
           overflow <=    1.0 03:TODD_MN2j       .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.8965E-04  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00321------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:TODD_MN3        .12     .014 No_date   28:00   38.39  n/a     .000
                out <=    1.0 01:TODD_MN3n       .12     .014 No_date   28:00   38.39  n/a     .000
           overflow <=    1.0 03:TODD_MN3j       .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.8651E-04  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00322------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A2            25.50    1.991 No_date   28:03   34.66 .607     .000
      [XIMP=.42:TIMP=.52]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 566.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0005:C00323------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A2            25.50    1.991 No_date   28:03   34.66  n/a     .000
     Major System   /     1.0 02:A2-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A2-MN         25.50    1.818 No_date   28:00   34.70  n/a     .000
      {MjSysSto=.5163E+02, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00324------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:TODD_MN2n      2.10     .238 No_date   28:00   38.41  n/a     .000
                    +     1.0 02:TODD_MN3n       .12     .014 No_date   28:00   38.39  n/a     .000
                    +     1.0 02:TODD_MJj        .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:TODD_P         3.06     .385 No_date   28:00   41.58  n/a     .000
                    +     1.0 02:TODD_ALL     112.91    9.069 No_date   28:05   38.19  n/a     .000
                    +     1.0 02:W_CLAR_MJn     1.77     .192 No_date   28:00   37.36  n/a     .000
                 SUM=     1.0 01:TODD         119.95    9.538 No_date   28:04   38.27  n/a     .000
R0005:C00325------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:TODD         119.95    9.538 No_date   28:04   38.27  n/a     .000
      fname :TODD.0005
      remark:Total Flows at Todd Drain
#*****************************************************************************
#    Todd Pond 3
#    - Rating curve obtained from Barrhaven South MSS modeling
#    - stantec 2007, Tributary Drainage Area to MSS Pond 3 = 193 ha
#*****************************************************************************
R0005:C00326------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:TODD         119.95    9.538 No_date   28:04   38.27  n/a     .000
                out <=    1.0 01:MS_P3        119.95    3.765 No_date   28:29   38.27  n/a     .000
           overflow <=    1.0 03:P3-OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.2351E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00327------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:GreenB     54717.73   70.171 No_date   36:56   18.73  n/a     .000
                    +     1.0 02:MS_P3        119.95    3.765 No_date   28:29   38.27  n/a     .000
                    +     1.0 02:P3-OVF          .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:TODD_MN2j       .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:A2-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                 SUM=     1.0 01:SN_TO      54837.69   70.373 No_date   36:55   18.77  n/a     .000
R0005:C00328------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_TO      54837.69   70.373 No_date   36:55   18.77  n/a     .000
      fname :SN_TO.0005
      remark:Total Flows at Todd Drain
#
# Hydrograph from Todd Drain routed to Corrigan Drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 2462
# 2021-02-19 Change the slope from 0.033 % (as per Stantec Report 2007) to 0.05 % so the model will be more stable and g
R0005:C00329------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_TO      54837.69   70.373 No_date   36:55   18.77  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:N_TO       54837.69   70.283 No_date   37:09   18.77  n/a     .000
      [L/S/n=  280./ .050/.045]
      {Vmax=  .827:Dmax= 2.568}
R0005:C00330------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:N_TO       54837.69   70.283 No_date   37:09   18.77  n/a     .000
      fname :N_TO.0005
      remark:Total inflows at Station 2462
#*****************************************************************************
#    Catchment CORRIG
#    - To Corrigan Drain (south of the Jock)
#    - Primarily Developed (medium density)
#    - JFSA JAN 2021, add Corrigan subcatchments as per IBI, July 2008
#*****************************************************************************
R0005:C00331------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:corr1         15.87    1.806 No_date   28:01   41.58 .728     .000
      [XIMP=.63:TIMP=.63]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 325.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0005:C00332------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:corr1         15.87    1.806 No_date   28:01   41.58  n/a     .000
     Major System   /     1.0 02:corr1-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:corr1-MN      15.87    1.806 No_date   28:01   41.58  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00333------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:corr2         12.47     .161 No_date   29:11   21.69 .380     .000
      [CN= 77.0: N= 3.00: Tp= 1.10]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0005:C00334------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A1-Corrig     15.75    1.357 No_date   28:02   34.66 .607     .000
      [XIMP=.42:TIMP=.52]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 324.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0005:C00335------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A1-Corrig     15.75    1.357 No_date   28:02   34.66  n/a     .000
     Major System   /     1.0 02:A1-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A1-MN         15.75    1.357 No_date   28:02   34.66  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00336------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:B1             2.77     .055 No_date   28:09   13.56 .237     .000
      [CN= 56.0: N= 3.00: Tp=  .23]
      [IaREC= 4.00: SMIN= 79.69: SMAX=531.24: SK= .010]
      [InterEventTime=  12.00]
R0005:C00337------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A4             1.27     .153 No_date   28:00   42.00 .735     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 253.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0005:C00338------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A4             1.27     .153 No_date   28:00   42.00  n/a     .000
     Major System   /     1.0 02:A4-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A4-MN          1.27     .153 No_date   28:00   42.00  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00339------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:A1-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:A1-MN         15.75    1.357 No_date   28:02   34.66  n/a     .000
                    +     1.0 02:corr1-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:corr1-MN      15.87    1.806 No_date   28:01   41.58  n/a     .000
                    +     1.0 02:corr2         12.47     .161 No_date   29:11   21.69  n/a     .000
                    +     1.0 02:B1             2.77     .055 No_date   28:09   13.56  n/a     .000
                    +     1.0 02:A4-MN          1.27     .153 No_date   28:00   42.00  n/a     .000
                 SUM=     1.0 01:MH101         48.13    3.389 No_date   28:01   32.56  n/a     .000
R0005:C00340------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH101         48.13    3.389 No_date   28:01   32.56  n/a     .000
      fname :MH101.0005
      remark:Total Flows at MH101
R0005:C00341------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH101         48.13    3.389 No_date   28:01   32.56  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:101-102       48.13    3.277 No_date   28:03   32.56  n/a     .000
      [L/S/n=  368./ .540/.013]
      {Vmax= 3.010:Dmax= 1.049}
      [Din= 1.05:Dused= 1.28}
R0005:C00342------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:A2-MN         25.50    1.818 No_date   28:00   34.70  n/a     .000
                    +     1.0 02:101-102       48.13    3.277 No_date   28:03   32.56  n/a     .000
                 SUM=     1.0 01:MH102         73.63    5.095 No_date   28:03   33.30  n/a     .000
R0005:C00343------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH102         73.63    5.095 No_date   28:03   33.30  n/a     .000
      fname :MH102.0005
      remark:Total Flows at MH102
R0005:C00344------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A5             1.60     .202 No_date   28:01   44.32 .776     .000
      [XIMP=.71:TIMP=.71]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 300.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0005:C00345------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:A4-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:A5             1.60     .202 No_date   28:01   44.32  n/a     .000
                 SUM=     1.0 01:A5T            1.60     .202 No_date   28:01   44.32  n/a     .000
R0005:C00346------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A5T            1.60     .202 No_date   28:01   44.32  n/a     .000
     Major System   /     1.0 02:A5-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A5-MN          1.60     .202 No_date   28:01   44.32  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00347------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH102         73.63    5.095 No_date   28:03   33.30  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:102-103       73.63    4.821 No_date   28:05   33.30  n/a     .000
      [L/S/n=  504./ .280/.013]
      {Vmax= 2.606:Dmax= 1.382}
      [Din= 1.50:Dused= 1.68}
R0005:C00348------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:102-103       73.63    4.821 No_date   28:05   33.30  n/a     .000
                    +     1.0 02:A5-MN          1.60     .202 No_date   28:01   44.32  n/a     .000
                 SUM=     1.0 01:MH103         75.23    4.991 No_date   28:04   33.53  n/a     .000
R0005:C00349------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH103         75.23    4.991 No_date   28:04   33.53  n/a     .000
      fname :MH103.0005
      remark:Total Flows at MH103
R0005:C00350------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH103         75.23    4.991 No_date   28:04   33.53  n/a     .000
     [RDT= 1.00] out<-    1.0 01:103-104       75.23    4.875 No_date   28:06   33.53  n/a     .000
      [L/S/n=  438./ .460/.013]
      {Vmax= 3.219:Dmax= 1.124}
      [Din= 1.65:Dused= 1.65}
R0005:C00351------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A6             1.56     .200 No_date   28:01   44.32 .776     .000
      [XIMP=.71:TIMP=.71]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 280.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0005:C00352------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:A5-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:A6             1.56     .200 No_date   28:01   44.32  n/a     .000
                 SUM=     1.0 01:A6T            1.56     .200 No_date   28:01   44.32  n/a     .000
R0005:C00353------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A6T            1.56     .200 No_date   28:01   44.32  n/a     .000
     Major System   /     1.0 02:A6-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A6-MN          1.56     .200 No_date   28:01   44.32  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00354------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:A6-MN          1.56     .200 No_date   28:01   44.32  n/a     .000
                    +     1.0 02:103-104       75.23    4.875 No_date   28:06   33.53  n/a     .000
                    +     1.0 02:TODD_MJn      30.23    2.959 No_date   28:02   39.47  n/a     .000
                 SUM=     1.0 01:MH104        107.02    7.823 No_date   28:04   35.37  n/a     .000
R0005:C00355------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH104        107.02    7.823 No_date   28:04   35.37  n/a     .000
      fname :MH104.0005
      remark:Total Flows at MH104
R0005:C00356------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:B2            12.31    1.023 No_date   28:02   34.82 .610     .000
      [XIMP=.41:TIMP=.54]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 417.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0005:C00357------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:B2            12.31    1.023 No_date   28:02   34.82  n/a     .000
     Major System   /     1.0 02:B2-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:B2-MN         12.31    1.023 No_date   28:02   34.82  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00358------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:B2-MN         12.31    1.023 No_date   28:02   34.82  n/a     .000
     [RDT= 1.00] out<-    1.0 01:315-333       12.31     .941 No_date   28:04   34.82  n/a     .000
      [L/S/n=  254./ .100/.013]
      {Vmax= 1.219:Dmax=  .834}
      [Din= 1.20:Dused= 1.20}
R0005:C00359------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:B3             5.59     .477 No_date   28:02   34.82 .610     .000
      [XIMP=.41:TIMP=.54]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 345.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0005:C00360------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:B3             5.59     .477 No_date   28:02   34.82  n/a     .000
     Major System   /     1.0 02:B3-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:B3-MN          5.59     .459 No_date   28:00   34.87  n/a     .000
      {MjSysSto=.3219E+01, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00361------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:B3-MN          5.59     .459 No_date   28:00   34.87  n/a     .000
                    +     1.0 02:315-333       12.31     .941 No_date   28:04   34.82  n/a     .000
                 SUM=     1.0 01:MH333         17.90    1.400 No_date   28:04   34.84  n/a     .000
R0005:C00362------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH333         17.90    1.400 No_date   28:04   34.84  n/a     .000
      fname :MH333.0005
      remark:Total Flows at MH333
R0005:C00363------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH333         17.90    1.400 No_date   28:04   34.84  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:333-335       17.90    1.320 No_date   28:06   34.84  n/a     .000
      [L/S/n=  251./ .100/.013]
      {Vmax= 1.282:Dmax= 1.033}
      [Din= 1.20:Dused= 1.26}
R0005:C00364------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:333-335       17.90    1.320 No_date   28:06   34.84  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:335-338       17.90    1.265 No_date   28:06   34.84  n/a     .000
      [L/S/n=  185./ .100/.013]
      {Vmax= 1.264:Dmax= 1.010}
      [Din= 1.20:Dused= 1.23}
R0005:C00365------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:335-338       17.90    1.265 No_date   28:06   34.84  n/a     .000
     [RDT= 1.00] out<-    1.0 01:338-340       17.90    1.183 No_date   28:06   34.84  n/a     .000
      [L/S/n=  233./ .100/.013]
      {Vmax= 1.294:Dmax=  .872}
      [Din= 1.35:Dused= 1.35}
R0005:C00366------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:B4             7.60     .638 No_date   28:02   34.82 .610     .000
      [XIMP=.41:TIMP=.54]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 388.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
```

```
       [SMIN= 33.81: SMAX=225.43: SK= .010]
R0005:C00367------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:B4             7.60     .638 No_date   28:02   34.82  n/a     .000
     Major System   /     1.0 02:B4-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:B4-MN          7.60     .638 No_date   28:02   34.82  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00368------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:338-340       17.90    1.183 No_date   28:06   34.84  n/a     .000
                    +     1.0 02:B4-MN          7.60     .638 No_date   28:02   34.82  n/a     .000
                 SUM=     1.0 01:MH340         25.50    1.761 No_date   28:05   34.83  n/a     .000
R0005:C00369------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH340         25.50    1.761 No_date   28:05   34.83  n/a     .000
      fname :MH340.0005
      remark:Total Flows at MH340
R0005:C00370------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH340         25.50    1.761 No_date   28:05   34.83  n/a     .000
     [RDT= 1.00] out<-    1.0 01:340-104       25.50    1.698 No_date   28:06   34.83  n/a     .000
      [L/S/n=  240./ .150/.013]
      {Vmax= 1.648:Dmax=  .823}
      [Din= 1.65:Dused= 1.65}
R0005:C00371------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:340-104       25.50    1.698 No_date   28:06   34.83  n/a     .000
                    +     1.0 02:MH104        107.02    7.823 No_date   28:04   35.37  n/a     .000
                 SUM=     1.0 01:MH104T       132.52    9.463 No_date   28:04   35.27  n/a     .000
R0005:C00372------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH104T       132.52    9.463 No_date   28:04   35.27  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:104-105      132.52    8.848 No_date   28:06   35.27  n/a     .000
      [L/S/n=  380./ .100/.013]
      {Vmax= 2.012:Dmax= 1.868}
      {HGTH= 2.20:WDTH= 2.52}
R0005:C00373------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:B5             2.20     .248 No_date   28:00   38.90 .681     .000
      [XIMP=.57:TIMP=.57]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 187.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0005:C00374------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:B5             2.20     .248 No_date   28:00   38.90  n/a     .000
     Major System   /     1.0 02:B5-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:B5-MN          2.20     .248 No_date   28:00   38.90  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00375------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A8              .96     .130 No_date   28:00   44.32 .776     .000
      [XIMP=.71:TIMP=.71]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 186.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0005:C00376------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:A6-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:A8              .96     .130 No_date   28:00   44.32  n/a     .000
                 SUM=     1.0 01:A8T             .96     .130 No_date   28:00   44.32  n/a     .000
R0005:C00377------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A8T             .96     .130 No_date   28:00   44.32  n/a     .000
     Major System   /     1.0 02:A8-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A8-MN           .96     .130 No_date   28:00   44.32  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00378------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:104-105      132.52    8.848 No_date   28:06   35.27  n/a     .000
                    +     1.0 02:B5-MN          2.20     .248 No_date   28:00   38.90  n/a     .000
                    +     1.0 02:A8-MN           .96     .130 No_date   28:00   44.32  n/a     .000
                    +     1.0 02:TODD_MN3j       .00     .000 No_date    0:00     .00  n/a     .000
                 SUM=     1.0 01:MH105        135.68    9.064 No_date   28:05   35.39  n/a     .000
R0005:C00379------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH105        135.68    9.064 No_date   28:05   35.39  n/a     .000
      fname :MH105.0005
      remark:Total Flows at MH105
R0005:C00380------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
 *  DIVERT HYD      ->    1.0 01:A8-MJ           .00     .000 No_date    0:00     .00  n/a     .000
           diverted <=    1.0 02:A8-MJ-JR        .00     .000 No_date    0:00     .00  n/a     .000
           diverted <=    1.0 03:A8-MJ-B6        .00     .000 No_date    0:00     .00  n/a     .000
R0005:C00381------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    DIVERT HYD      ->    1.0 01:MH105        135.68    9.064 No_date   28:05   35.39  n/a     .000
           diverted <=    1.0 02:MH105-JR      25.07    6.058 No_date   28:05   35.39  n/a     .000
           diverted <=    1.0 03:MH105-B6     110.61    3.006 No_date   28:05   35.39  n/a     .000
R0005:C00382------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:B7             7.19     .661 No_date   28:01   34.82 .610     .000
      [XIMP=.41:TIMP=.54]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 211.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0005:C00383------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:B4-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:B7             7.19     .661 No_date   28:01   34.82  n/a     .000
                 SUM=     1.0 01:B7-B4MJ        7.19     .661 No_date   28:01   34.82  n/a     .000
R0005:C00384------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:B7-B4MJ        7.19     .661 No_date   28:01   34.82  n/a     .000
     Major System   /     1.0 02:B7R-MJ          .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:B7R-MN         7.19     .629 No_date   27:59   34.89  n/a     .000
      {MjSysSto=.5005E+01, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00385------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:B7R-MN         7.19     .629 No_date   27:59   34.89  n/a     .000
     [RDT= 1.00] out<-    1.0 01:360-106A       7.19     .615 No_date   28:05   34.89  n/a     .000
      [L/S/n=  167./ .100/.013]
      {Vmax= 1.089:Dmax=  .665}
      [Din= 1.05:Dused= 1.05}
R0005:C00386------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:B6             3.29     .315 No_date   28:00   34.82 .610     .000
      [XIMP=.41:TIMP=.54]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 148.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0005:C00387------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:B6             3.29     .315 No_date   28:00   34.82  n/a     .000
     Major System   /     1.0 02:B6-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:B6-MN          3.29     .064 No_date   27:39   34.87  n/a     .000
      {MjSysSto=.2841E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00388------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:EX-LAND       32.50    2.843 No_date   28:02   35.73 .626     .000
      [XIMP=.50:TIMP=.50]
      [LOSS= 2 :CN= 74.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 465.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 36.67: SMAX=244.49: SK= .010]
R0005:C00389------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:EX-LAND       32.50    2.843 No_date   28:02   35.73  n/a     .000
     Major System   /     1.0 02:EX-LAND-MJ      .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:EX-LAND-MN    32.50    2.275 No_date   27:57   35.73  n/a     .000
      {MjSysSto=.2310E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00390------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:B7R-MJ          .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:EX-LAND-MJ      .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:B5-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:B6-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:B6-MN          3.29     .064 No_date   27:39   34.87  n/a     .000
                    +     1.0 02:A8-MJ-B6        .00     .000 No_date    0:00     .00  n/a     .000
                 SUM=     1.0 01:B6-B7ExMJ      3.29     .064 No_date   27:39   34.87  n/a     .000
R0005:C00391------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:B6-B7ExMJ      3.29     .064 No_date   27:39   34.87  n/a     .000
     Major System   /     1.0 02:B6R-MJ          .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:B6R-MN         3.29     .064 No_date   27:39   34.87  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00392------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH105-B6     110.61    3.006 No_date   28:05   35.39  n/a     .000
     [RDT= 1.00] out<-    1.0 01:105-106A     110.61    3.005 No_date   28:08   35.39  n/a     .000
      [L/S/n=  208./ .100/.013]
      {Vmax= 1.597:Dmax= 1.248}
      [Din= 1.80:Dused= 1.80}
R0005:C00393------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:360-106A       7.19     .615 No_date   28:05   34.89  n/a     .000
                    +     1.0 02:105-106A     110.61    3.005 No_date   28:08   35.39  n/a     .000
                    +     1.0 02:B6R-MN         3.29     .064 No_date   27:39   34.87  n/a     .000
                    +     1.0 02:B6R-MJ          .00     .000 No_date    0:00     .00  n/a     .000
                 SUM=     1.0 01:MH106A       121.09    3.682 No_date   28:05   35.35  n/a     .000
R0005:C00394------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH106A       121.09    3.682 No_date   28:05   35.35  n/a     .000
      fname :MH106A.0005
      remark:Total Flows at MH106A
R0005:C00395------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH106A       121.09    3.682 No_date   28:05   35.35  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:106A-106     121.09    3.651 No_date   28:05   35.35  n/a     .000
      [L/S/n=  190./ .100/.013]
      {Vmax= 1.633:Dmax= 1.484}
      [Din= 1.80:Dused= 1.81}
R0005:C00396------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A9             2.44     .316 No_date   28:00   44.32 .776     .000
      [XIMP=.71:TIMP=.71]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 262.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0005:C00397------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A9             2.44     .316 No_date   28:00   44.32  n/a     .000
     Major System   /     1.0 02:A9-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A9-MN          2.44     .316 No_date   28:00   44.32  n/a     .000
R0005:C00398------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:106A-106     121.09    3.651 No_date   28:05   35.35  n/a     .000
                    +     1.0 02:A9-MN          2.44     .316 No_date   28:00   44.32  n/a     .000
                 SUM=     1.0 01:MH106        123.53    3.896 No_date   28:03   35.52  n/a     .000
R0005:C00399------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH106        123.53    3.896 No_date   28:03   35.52  n/a     .000
      fname :MH106.0005
      remark:Total Flows at MH106
R0005:C00400------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH106        123.53    3.896 No_date   28:03   35.52  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:106-107      123.53    3.814 No_date   28:07   35.52  n/a     .000
      [L/S/n=  123./ .100/.013]
      {Vmax= 1.656:Dmax= 1.516}
      [Din= 1.80:Dused= 1.85}
R0005:C00401------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A10            4.14     .345 No_date   28:01   32.29 .565     .000
      [XIMP=.35:TIMP=.47]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 183.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0005:C00402------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A10            4.14     .345 No_date   28:01   32.29  n/a     .000
     Major System   /     1.0 02:A10-MJ          .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A10-MN         4.14     .310 No_date   27:58   32.34  n/a     .000
      {MjSysSto=.7677E+01, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00403------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A11           10.61    1.053 No_date   28:02   38.79 .679     .000
      [XIMP=.53:TIMP=.62]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 379.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0005:C00404------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A11           10.61    1.053 No_date   28:02   38.79  n/a     .000
     Major System   /     1.0 02:A11-MJ          .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A11-MN        10.61     .993 No_date   28:00   38.82  n/a     .000
      {MjSysSto=.1280E+02, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00405------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:106-107      123.53    3.814 No_date   28:07   35.52  n/a     .000
                    +     1.0 02:A10-MN         4.14     .310 No_date   27:58   32.34  n/a     .000
                    +     1.0 02:A11-MN        10.61     .993 No_date   28:00   38.82  n/a     .000
                 SUM=     1.0 01:MH107        138.28    5.112 No_date   28:06   35.68  n/a     .000
R0005:C00406------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH107        138.28    5.112 No_date   28:06   35.68  n/a     .000
      fname :MH107.0005
      remark:Total Flows at MH107
R0005:C00407------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH107        138.28    5.112 No_date   28:06   35.68  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:107-119      138.28    5.061 No_date   28:07   35.68  n/a     .000
      [L/S/n=  114./ .120/.013]
      {Vmax= 1.898:Dmax= 1.622}
      [Din= 1.80:Dused= 1.98}
R0005:C00408------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:107-119      138.28    5.061 No_date   28:07   35.68  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:119-108      138.28    5.009 No_date   28:07   35.68  n/a     .000
      [L/S/n=   66./ .120/.013]
      {Vmax= 1.893:Dmax= 1.616}
      [Din= 1.80:Dused= 1.97}
R0005:C00409------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A12           12.29    1.145 No_date   28:00   34.82 .610     .000
      [XIMP=.41:TIMP=.54]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 183.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0005:C00410------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A12           12.29    1.145 No_date   28:00   34.82  n/a     .000
     Major System   /     1.0 02:A12-MJ          .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A12-MN        12.29    1.029 No_date   27:57   34.93  n/a     .000
      {MjSysSto=.2567E+02, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00411------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A13            2.59     .312 No_date   28:01   44.32 .776     .000
      [XIMP=.71:TIMP=.71]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 379.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0005:C00412------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A13            2.59     .312 No_date   28:01   44.32  n/a     .000
     Major System   /     1.0 02:A13-MJ          .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A13-MN         2.59     .312 No_date   28:01   44.32  n/a     .000
R0005:C00413------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:Pond-Block     2.94     .261 No_date   28:00   32.90 .576     .000
      [XIMP=.41:TIMP=.41]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 183.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0005:C00414------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:119-108      138.28    5.009 No_date   28:07   35.68  n/a     .000
                    +     1.0 02:A13-MN         2.59     .312 No_date   28:01   44.32  n/a     .000
                    +     1.0 02:A12-MN        12.29    1.029 No_date   27:57   34.93  n/a     .000
                 SUM=     1.0 01:MH108        153.16    6.257 No_date   28:01   35.77  n/a     .000
R0005:C00415------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH108        153.16    6.257 No_date   28:01   35.77  n/a     .000
      fname :MH108.0005
      remark:Total Flows at MH108
R0005:C00416------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH108        153.16    6.257 No_date   28:01   35.77  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:108-116      153.16    6.250 No_date   28:02   35.77  n/a     .000
      [L/S/n=   77./ .130/.013]
      {Vmax= 2.057:Dmax= 1.724}
      [Din= 1.80:Dused= 2.10}
R0005:C00417------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:108-116      153.16    6.250 No_date   28:02   35.77  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:116-corrig   153.16    6.248 No_date   28:07   35.77  n/a     .000
      [L/S/n=   80./ .130/.013]
      {Vmax= 2.057:Dmax= 1.723}
      [Din= 1.80:Dused= 2.10}
R0005:C00418------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:116-corrig   153.16    6.248 No_date   28:07   35.77  n/a     .000
                    +     1.0 02:Pond-Block     2.94     .261 No_date   28:00   32.90  n/a     .000
                 SUM=     1.0 01:Corrigan     156.10    6.442 No_date   28:02   35.71  n/a     .000
R0005:C00419------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:Corrigan     156.10    6.442 No_date   28:02   35.71  n/a     .000
      fname :Corrigan.0005
      remark:HYD_COMMENT=["Total Flows at Corrigan Pond]
R0005:C00420------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:Corrigan     156.10    6.442 No_date   28:02   35.71  n/a     .000
                out <=    1.0 01:Co-P         156.10    5.462 No_date   28:10   35.71  n/a     .000
           overflow <=    1.0 03:Co-P-OVF        .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.9809E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00421------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:Co-P-OVF        .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:Co-P         156.10    5.462 No_date   28:10   35.71  n/a     .000
                    +     1.0 02:N_TO       54837.69   70.283 No_date   37:09   18.77  n/a     .000
                    +     1.0 02:MH105-JR      25.07    6.058 No_date   28:05   35.39  n/a     .000
                    +     1.0 02:A8-MJ-JR        .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:A9-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:A10-MJ          .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:A11-MJ          .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:A12-MJ          .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:A13-MJ          .00     .000 No_date    0:00     .00  n/a     .000
                 SUM=     1.0 01:corrig     55018.86   70.610 No_date   37:06   18.83  n/a     .000
R0005:C00422------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:corrig     55018.86   70.610 No_date   37:06   18.83  n/a     .000
      fname :corrig.0005
      remark:Total Flows at Corrigan Pond
#*****************************************************************************
#    Corrigan Pond 1
#    - Rating curve obtained from Barrhaven South MSS modeling
#    - Tributary Drainage Area to MSS Pond 1 = 145 ha
#*****************************************************************************
#
# Hydrograph from Corrigan Drain routed to Jockvale Road
# Channel X-Section obtained from RVCA Hydraulic Model - Station 2462
#
R0005:C00423------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:corrig     55018.86   70.610 No_date   37:06   18.83  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N_MI       55018.86   70.599 No_date   37:10   18.83  n/a     .000
      [L/S/n=  580./ .445/.045]
      {Vmax= 1.647:Dmax= 1.477}
#*****************************************************************************
#    Catchment MILLS
#    - To SWM Facility north of the Jock
#    - Primarily residental development
#*****************************************************************************
R0005:C00424------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:MILLS        175.99    9.992 No_date   28:07   30.98 .542     .000
      [XIMP=.38:TIMP=.38]
      [LOSS= 2 :CN= 74.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI=1118.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 36.67: SMAX=244.49: SK= .010]
#*****************************************************************************
#    Chapman Mills SWM Pond
#    - Rating curve obtained from CCL hydraulic modeling
#*****************************************************************************
R0005:C00425------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:MILLS        175.99    9.992 No_date   28:07   30.97  n/a     .000
                out <=    1.0 01:MILL_P       175.99    3.368 No_date   28:44   30.97  n/a     .000
           overflow <=    1.0 03:MIL-OV          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.1941E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00426------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N_MI       55018.86   70.599 No_date   37:10   18.83  n/a     .000
                    +     1.0 02:MIL-OV          .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:MILL_P       175.99    3.368 No_date   28:44   30.97  n/a     .000
                 SUM=     1.0 01:SN_MI      55194.85   70.961 No_date   37:08   18.87  n/a     .000
R0005:C00427------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_MI      55194.85   70.961 No_date   37:08   18.87  n/a     .000
      fname :SN_MI.0005
      remark:Total Flows at Jockvale Road
#
# Hydrograph from Jockvale Road routed to Heart's Desire
# Channel X-Section obtained from RVCA Hydraulic Model - Station 689
#
R0005:C00428------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_MI      55194.85   70.961 No_date   37:08   18.87  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N_DE       55194.85   70.846 No_date   37:22   18.87  n/a     .000
      [L/S/n= 1962./ .223/.045]
      {Vmax= 1.305:Dmax= 1.895}
#*****************************************************************************
#    Catchment DESIRE
```

```
#    - To Jock River (north of the Jock)
#    - Rural-estate subdivision (Heart's Desire Community)
#*****************************************************************************
R0005:C00429-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:DESIRE        23.78    1.359 No_date   28:03   27.22 .477     .000
      [XIMP=.25:TIMP=.25]
      [LOSS= 2 :CN= 77.0]
      [Pervious    area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 400.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
#*****************************************************************************
#    Catchment JOCKVA
#    - To Jockvale SWM Facility
#    - Residential development & golf course
#    - JFSA 2021-01-11 update JOCKVA after updating CORRIG as per IBI GROUP, July 2008.
#      JOCKVA area became 225.13 ha instead of 257.63 ha. JOCKVA separated into two areas JOCKVA and EX-LAND 32.5 ha as
#*****************************************************************************
R0005:C00430-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:JOCKVA       225.13   14.675 No_date   28:09   35.73 .626     .000
      [XIMP=.50:TIMP=.50]
      [LOSS= 2 :CN= 74.0]
      [Pervious    area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI=1311.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 36.67: SMAX=244.49: SK= .010]
R0005:C00431-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:EX-LAND-MN    32.50    2.275 No_date   27:57   35.73  n/a     .000
                    +     1.0 02:JOCKVA       225.13   14.675 No_date   28:09   35.73  n/a     .000
                    +     1.0 02:B2-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:B3-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                 SUM=     1.0 01:JOCKVA-TO    257.63   16.950 No_date   28:09   35.73  n/a     .000
R0005:C00432-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:JOCKVA-TO    257.63   16.950 No_date   28:09   35.73  n/a     .000
      fname :JOCKVA-TO.0005
      remark:Total Flows at KB first pond
#*****************************************************************************
#    Jockvale SWM Facility
#    - Rating curve obtained from Jockvale Servicing Study (CCL 1999)
#*****************************************************************************
R0005:C00433-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:JOCKVA-TO    257.63   16.950 No_date   28:09   35.73  n/a     .000
                out <=    1.0 01:JOCK_P       257.63    4.781 No_date   28:48   35.73  n/a     .000
           overflow <=    1.0 03:JO-OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.4115E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0005:C00434-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N_DE       55194.85   70.846 No_date   37:22   18.87  n/a     .000
                    +     1.0 02:DESIRE        23.78    1.359 No_date   28:03   27.22  n/a     .000
                    +     1.0 02:JO-OVF          .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:JOCK_P       257.63    4.781 No_date   28:48   35.73  n/a     .000
                 SUM=     1.0 01:SN_DE      55476.26   71.408 No_date   37:19   18.95  n/a     .000
R0005:C00435-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_DE      55476.26   71.408 No_date   37:19   18.95  n/a     .000
      fname :SN_DE.0005
      remark:Total Flows at Heart's Desire
#
# Hydrograph from Heart's Desire routed to Rideau River
# Channel X-Section obtained from RVCA Hydraulic Model - Station 0
#
R0005:C00436-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_DE      55476.26   71.408 No_date   37:19   18.95  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N1         55476.26   71.403 No_date   37:23   18.95  n/a     .000
      [L/S/n=  563./ .967/.045]
      {Vmax= 1.679:Dmax=  .957}
#*****************************************************************************
#    Catchment S-2
#    - To Jock River (north and south)
#    - Undeveloped floodplain and river
#*****************************************************************************
R0005:C00437-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:S-2          102.94    2.262 No_date   28:20   19.00 .333     .000
      [CN= 72.0: N= 3.00: Tp=  .40]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
R0005:C00438-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N1         55476.26   71.403 No_date   37:23   18.95  n/a     .000
                    +     1.0 02:S-2          102.94    2.262 No_date   28:20   19.00  n/a     .000
                 SUM=     1.0 01:SN_N1      55579.20   71.539 No_date   37:23   18.95  n/a     .000
R0005:C00439-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_N1      55579.20   71.539 No_date   37:23   18.95  n/a     .000
      fname :SN_N1.0005
      remark:Total Flows at Rideau River
##############################################################################
  ** END OF RUN :    9

****************************************************************************************************





 RUN#:COMMAND#
R0010:C00001------------------------------------------------------------------------------------
     START
      [TZERO =    .00 hrs on        0]
      [METOUT=   2    (1=imperial, 2=metric output)]
      [NSTORM=   1 ]
      [NRUN  = 0010 ]
#*****************************************************************************
#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
#*****************************************************************************
#  Project Name: [Jock River]    Project Number: [1474-16]
#  Date         : 04-03-2021
#  Modeller     : [M.M.]
#  Company      : JFSAinc.
#  License #    :  2549237
#*****************************************************************************
# CALIBRATION OF SUMMER MODEL PARAMETERS
# USING CONTINUOUS SIMULATIONS
# Rainfall data from JFSA raingauge installed at site + other gauges by the City
# Use data collected from May 1st to July 14, 2003
# 2020-11-30 change TMJSTO in COMPUTE DUALHYD (TMJSTO = 0.1 instead of 0.0001)
# 2020-12-01 correct pond curve values
# 2020-12-01 change W_CLAR_BRAZ XIMP to 0.55, SLPI=[0.5](%) (impervious slope), and LGI up to 700m
# 2021-02-19 Change the slope for ROUTE CHANNEL Station 2462 (NHYDout=["N_TO"] ,NHYDin=["SN_TO"]) from 0.033 % (as per S
# 2021-02-19 Change the slope for ROUTE CHANNEL Station 5002 (NHYDout=["N_WC"] ,NHYDin=["SN_CE"]) from 0.01 % (as per St
# ----------------------------------------------------------------------------
R0010:C00002------------------------------------------------------------------------------------
     READ STORM
      Filename = storm.001
      Comment  = Pluie SCS de 24 hres 1:10 ans pour Ottawa CDA
      [SDT=10.00:SDUR=  24.00:PTOT=  64.69]
R0010:C00003------------------------------------------------------------------------------------
     MODIFY STORM
      [RFACT=  1.00:TSHIFT= 960.00 min]
      [SDT=10.00:SDUR=  40.00:PTOT=  64.69]
R0010:C00004------------------------------------------------------------------------------------
     DEFAULT VALUES
      Filename = T:\PROJ\1474-16\Design\20201026-QuantityControlAnalysis\SWMHYMO\SMR-Model\updated3\CitiGate.DEF
      ICASEdv  = 1 (read and print data)
      FileTitle= File comment: [Based onvarious calibration exercises in Onta
                 THE FOLLOWING PARAMETERS ARE USED IN THE DESIGN STANDHYD COM
      Horton's infiltration equation parameters:
      [Fo= 76.20 mm/hr] [Fc=13.20 mm/hr] [DCAY= 4.14 /hr] [F=  .00 mm]
      Parameters for PERVIOUS surfaces in STANDHYD:
      [IAper=   4.67 mm] [LGP=50.00 m] [MNP= .250]
      Parameters for IMPERVIOUS surfaces in STANDHYD:
      [IAimp=   1.57 mm] [CLI= 1.50]   [MNI= .013]
      Parameters used in NASHYD:
      [Ia=   4.67 mm] [N= 3.00]
      Average monthly Pan Evaporation data in    (mm)
   JAN  FEB  MAR  APR  MAY  JUN  JUL  AUG  SEP  OCT  NOV  DEC
   .00  .00  .00  .00  .00  .00  .00  .00  .00  .00  .00  .00
      Average monthly Potential Evapotranspiration in    (mm)
   JAN  FEB  MAR  APR  MAY  JUN  JUL  AUG  SEP  OCT  NOV  DEC
   .00  .00  .00  .00  .00  .00  .00  .00  .00  .00  .00  .00
R0010:C00005------------------------------------------------------------------------------------
     COMPUTE API
      [APIini= 50.00: APIkdy= .8500: APIkdt= .9989]
      {APImax= 97.81: APIavg= 62.29: APImin= 44.87}
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.32
R0010:C00006-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:JR_HW       3680.00   11.879 No_date   36:59   20.23 .313     .000
      [CN= 64.0: N= 3.00: Tp= 7.13]
      [IaREC= 4.00: SMIN= 57.05: SMAX=380.32: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.32
R0010:C00007-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_13        971.00    4.365 No_date   32:35   18.83 .291     .000
      [CN= 61.0: N= 3.00: Tp= 3.76]
      [IaREC= 4.00: SMIN= 64.50: SMAX=430.01: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.80
R0010:C00008-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:JR_GWM      3074.00    5.829 No_date   39:59   16.22 .251     .000
      [CN= 55.0: N= 3.00: Tp=11.33]
      [IaREC= 4.00: SMIN= 83.24: SMAX=554.96: SK= .010]
      [InterEventTime=  12.00]
R0010:C00009-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:JR_ASH      1781.00   10.839 No_date   32:42   24.81 .383     .000
      [CN= 72.0: N= 3.00: Tp= 3.91]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
R0010:C00010-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_11        500.00    5.639 No_date   29:22   21.19 .328     .000
      [CN= 66.0: N= 3.00: Tp= 1.24]
      [IaREC= 4.00: SMIN= 52.62: SMAX=350.79: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.80
R0010:C00011-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:NN_CK       1917.00    7.897 No_date   34:28   21.19 .328     .000
      [CN= 66.0: N= 3.00: Tp= 5.29]
      [IaREC= 4.00: SMIN= 52.62: SMAX=350.79: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.52
R0010:C00012-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_10       5666.00   21.255 No_date   37:58   24.81 .383     .000
      [CN= 72.0: N= 3.00: Tp= 8.00]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.75
R0010:C00013-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:KG_CK       8376.00   20.398 No_date   39:59   21.19 .328     .000
      [CN= 66.0: N= 3.00: Tp=11.66]
      [IaREC= 4.00: SMIN= 52.62: SMAX=350.79: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.68
R0010:C00014-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_9        1132.00    8.921 No_date   30:54   23.73 .367     .000
      [CN= 70.0: N= 3.00: Tp= 2.51]
      [IaREC= 4.00: SMIN= 43.07: SMAX=287.10: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.82
R0010:C00015-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:NC_CK       4464.00   10.128 No_date   39:59   19.29 .298     .000
      [CN= 62.0: N= 3.00: Tp=11.32]
      [IaREC= 4.00: SMIN= 61.90: SMAX=412.66: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.80
R0010:C00016-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_8         131.00    1.689 No_date   28:57   19.76 .305     .000
      [CN= 63.0: N= 3.00: Tp=  .90]
      [IaREC= 4.00: SMIN= 59.42: SMAX=396.11: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.65
R0010:C00017-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:HB_DR       3854.00   11.811 No_date   38:37   21.19 .328     .000
      [CN= 66.0: N= 3.00: Tp= 8.42]
      [IaREC= 4.00: SMIN= 52.62: SMAX=350.79: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.82
R0010:C00018-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_7        3197.00    8.899 No_date   36:26   17.07 .264     .000
      [CN= 57.0: N= 3.00: Tp= 6.65]
      [IaREC= 4.00: SMIN= 76.32: SMAX=508.81: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.75
R0010:C00019-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_6         165.00     .818 No_date   33:04   21.69 .335     .000
      [CN= 67.0: N= 3.00: Tp= 4.18]
      [IaREC= 4.00: SMIN= 50.55: SMAX=336.97: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.67
R0010:C00020-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:VG_DR       1332.00    6.069 No_date   35:17   24.81 .383     .000
      [CN= 72.0: N= 3.00: Tp= 5.95]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
R0010:C00021-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_5         224.00    5.246 No_date   28:45   28.24 .437     .000
      [CN= 77.0: N= 3.00: Tp=  .75]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.20
R0010:C00022-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:FL_CK       4945.00   28.945 No_date   33:21   25.91 .401     .000
      [CN= 74.0: N= 3.00: Tp= 4.45]
      [IaREC= 4.00: SMIN= 36.67: SMAX=244.49: SK= .010]
      [InterEventTime=  12.00]
R0010:C00023-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_5A2        20.00     .614 No_date   28:36   31.37 .485     .000
      [CN= 81.0: N= 3.00: Tp=  .62]
      [IaREC= 4.00: SMIN= 25.21: SMAX=168.09: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.61
R0010:C00024-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_5A1      1412.00    5.817 No_date   37:54   27.06 .418     .000
      [CN= 75.0: N= 3.00: Tp= 8.00]
      [IaREC= 4.00: SMIN= 33.81: SMAX=225.43: SK= .010]
      [InterEventTime=  12.00]
R0010:C00025-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_4         585.00    8.458 No_date   29:57   31.37 .485     .000
      [CN= 81.0: N= 3.00: Tp= 1.75]
      [IaREC= 4.00: SMIN= 25.21: SMAX=168.09: SK= .010]
      [InterEventTime=  12.00]
R0010:C00026-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:LM_CK       1021.00   11.195 No_date   30:48   30.72 .475     .000
      [CN= 80.0: N= 3.00: Tp= 2.46]
      [IaREC= 4.00: SMIN= 26.32: SMAX=175.50: SK= .010]
      [InterEventTime=  12.00]
R0010:C00027-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_2         177.00    4.146 No_date   28:45   28.24 .437     .000
      [CN= 77.0: N= 3.00: Tp=  .75]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0010:C00028-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SM_DR       1122.00   10.275 No_date   31:46   31.37 .485     .000
      [CN= 81.0: N= 3.00: Tp= 3.25]
      [IaREC= 4.00: SMIN= 25.21: SMAX=168.09: SK= .010]
      [InterEventTime=  12.00]
R0010:C00029-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:MO_DR       2737.00   22.669 No_date   31:32   27.64 .427     .000
      [CN= 76.0: N= 3.00: Tp= 3.03]
      [IaREC= 4.00: SMIN= 32.46: SMAX=216.39: SK= .010]
      [InterEventTime=  12.00]
#
# Routing hydrographs
#
# Starting with the addition of Jock River Headwater and Subwatershed 13
#
R0010:C00030-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:JR_HW       3680.00   11.879 No_date   36:59   20.23  n/a     .000
                    +     1.0 02:SW_13        971.00    4.365 No_date   32:35   18.83  n/a     .000
                 SUM=     1.0 01:S_N13       4651.00   15.130 No_date   35:28   19.94  n/a     .000
#
# Sum of hydrographs from Node 13 routed to Node 13A
# (Approximated cross-section - see cross-section 258)
# Use n=0.04 for summer conditions and n=0.025 for spring conditions
#
R0010:C00031-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N13       4651.00   15.130 No_date   35:28   19.94  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N13A        4651.00   12.097 No_date   39:41   19.94  n/a     .000
      [L/S/n= 9074./ .022/.040]
      {Vmax=  .508:Dmax= 3.307}
#
# Addition of Subwatershed Jock River at Goodwood Marsh to Node 13A
#
R0010:C00032-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N13A        4651.00   12.097 No_date   39:41   19.94  n/a     .000
                    +     1.0 02:JR_GWM      3074.00    5.829 No_date   39:59   16.22  n/a     .000
                 SUM=     1.0 01:SN13A       7725.00   17.918 No_date   39:59   18.46  n/a     .000
#
# Insertion of a reservoir to simulate the effects of the Goodwood Marsh
#
R0010:C00033-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:SN13A       7725.00   17.918 No_date   39:59   18.46  n/a     .000
                out <=    1.0 01:RES_GM      7725.00    3.524 No_date   58:32   18.46  n/a     .000
     {MxStoUsed=.8503E+02  m3}
#
R0010:C00034-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:RES_GM      7725.00    3.524 No_date   58:32   18.46  n/a     .000
      fname :H_RESGM
      remark:Outflow from Res GM
# Output of Reservoir Goodwood Marsh routed from Node 13A to Node 12
# (Approximated cross-section - see cross-section 258)
# Use n=0.04 for summer conditions and n=0.025 for spring conditions
R0010:C00035-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:RES_GM      7725.00    3.524 No_date   58:32   18.46  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N12         7725.00    3.519 No_date   61:53   18.46  n/a     .000
      [L/S/n= 5926./ .076/.040]
      {Vmax=  .546:Dmax= 1.499}
#
# Addition of Subwatershed Jock River at Ashton to Node 12
#
R0010:C00036-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N12         7725.00    3.519 No_date   61:53   18.46  n/a     .000
                    +     1.0 02:JR_ASH      1781.00   10.839 No_date   32:42   24.81  n/a     .000
                 SUM=     1.0 01:S_N12       9506.00   12.834 No_date   32:45   19.65  n/a     .000
R0010:C00037-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:S_N12       9506.00   12.834 No_date   32:45   19.65  n/a     .000
      fname :H_SN12
      remark:flow at S_N12 near Ashton
#
# Sum of hydrographs from Node 12 routed to Node 11
```

```
# (Approximated cross-section - see cross-section 258)
# Use n=0.04 for summer conditions and n=0.025 for spring conditions
#
# Sum of hydrographs from Node 12 routed to Node 11 with Dummy section 248
#
R0010:C00038-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N12       9506.00   12.834 No_date   32:45   19.65  n/a     .000
     [RDT= 1.00] out<-    1.0 01:Dum11       9506.00   12.710 No_date   33:02   19.65  n/a     .000
      [L/S/n=  972./ .054/.040]
      {Vmax=  .680:Dmax= 2.598}
#
# Addition of Subwatershed 11 and No Name Creek to Node 11
#
R0010:C00039-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:Dum11       9506.00   12.710 No_date   33:02   19.65  n/a     .000
                    +     1.0 02:SW_11        500.00    5.639 No_date   29:22   21.19  n/a     .000
                    +     1.0 02:NN_CK       1917.00    7.897 No_date   34:28   21.19  n/a     .000
                 SUM=     1.0 01:S_N11      11923.00   21.813 No_date   33:05   19.96  n/a     .000
#
# Sum of hydrographs from Node 11 routed to Node 10
# Section 1
#
R0010:C00040-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N11      11923.00   21.813 No_date   33:05   19.96  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N10        11923.00   14.761 No_date   39:58   19.96  n/a     .000
      [L/S/n=14028./ .157/.040]
      {Vmax=  .452:Dmax= 1.212}
#
# Addition of Subwatershed 10 to Node 10
#
R0010:C00041-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N10        11923.00   14.761 No_date   39:58   19.96  n/a     .000
                    +     1.0 02:SW_10       5666.00   21.255 No_date   37:58   24.81  n/a     .000
                 SUM=     1.0 01:S_N10      17589.00   35.808 No_date   38:35   21.52  n/a     .000
R0010:C00042-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:S_N10      17589.00   35.808 No_date   38:35   21.52  n/a     .000
      fname :H_SN10
      remark:flow at S_N10: N10 + SW_10
# Addition of Kings Creek to S_N10
#
R0010:C00043-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:S_N10      17589.00   35.808 No_date   38:35   21.52  n/a     .000
                    +     1.0 02:KG_CK       8376.00   20.398 No_date   39:59   21.19  n/a     .000
                 SUM=     1.0 01:S_N10A     25965.00   55.807 No_date   39:58   21.41  n/a     .000
#
# Sum of hydrographs from Node 10 routed to Node 9
# Section 2
#
R0010:C00044-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N10A     25965.00   55.807 No_date   39:58   21.41  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N9         25965.00   54.076 No_date   39:59   21.41  n/a     .000
      [L/S/n= 3982./ .075/.040]
      {Vmax=  .682:Dmax= 1.695}
#
# Addition of Subwatershed 9 and Nichols Creek to Node 9
#
R0010:C00045-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N9         25965.00   54.076 No_date   39:59   21.41  n/a     .000
                    +     1.0 02:SW_9        1132.00    8.921 No_date   30:54   23.73  n/a     .000
                    +     1.0 02:NC_CK       4464.00   10.128 No_date   39:59   19.29  n/a     .000
                 SUM=     1.0 01:S_N9       31561.00   66.284 No_date   39:59   21.20  n/a     .000
#
# Sum of hydrographs from Node 9 routed to Node 8
# Section 3
#
R0010:C00046-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N9       31561.00   66.284 No_date   39:59   21.20  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N8         31561.00   61.483 No_date   39:57   21.20  n/a     .000
      [L/S/n= 2269./ .088/.045]
      {Vmax=  .363:Dmax= 1.619}
#
# Addition of Subwatershed 8 and Hobb's Drain to Node 8
#
R0010:C00047-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N8         31561.00   61.483 No_date   39:57   21.20  n/a     .000
                    +     1.0 02:SW_8         131.00    1.689 No_date   28:57   19.76  n/a     .000
                    +     1.0 02:HB_DR       3854.00   11.811 No_date   38:37   21.19  n/a     .000
                 SUM=     1.0 01:S_N8       35546.00   73.344 No_date   39:57   21.19  n/a     .000
#
# Sum of hydrographs from Node 8 routed to Node 7
# Section 4
#
R0010:C00048-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N8       35546.00   73.344 No_date   39:57   21.19  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N7         35546.00   61.416 No_date   45:01   21.19  n/a     .000
      [L/S/n= 3750./ .053/.070]
      {Vmax=  .218:Dmax= 1.987}
#
# Addition of Subwatershed 7 to Node 7
#
R0010:C00049-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N7         35546.00   61.416 No_date   45:01   21.19  n/a     .000
                    +     1.0 02:SW_7        3197.00    8.899 No_date   36:26   17.07  n/a     .000
                 SUM=     1.0 01:S_N7       38743.00   65.819 No_date   44:06   20.85  n/a     .000
R0010:C00050-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:S_N7       38743.00   65.819 No_date   44:06   20.85  n/a     .000
      fname :H_SN7
      remark:flow at S_N7: N7 + SW_7
# Insertion of a reservoir to simulate the effects of the Richmond Fen.
# Storage area and volumes were estimated from available topo maps.
# Release rate from fen was assumed to be controlled by the downstream
# river cross-section for summer conditions.  It is was assumed that for up to
# 0.75 m of water, the main channel of the river provided the storage.  Above
# this depth, the wetland starts to signigicantly store water.
#
R0010:C00051-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:S_N7       38743.00   65.819 No_date   44:06   20.85  n/a     .000
                out <=    1.0 01:RES_RF     38743.00   31.796 No_date   60:32   20.85  n/a     .000
     {MxStoUsed=.2597E+03  m3}
R0010:C00052-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:RES_RF     38743.00   31.796 No_date   60:32   20.85  n/a     .000
      fname :H_ResRF
      remark:outflow of Richmond Fen
#
# Sum of hydrographs from Node 7 routed to Node 6
# Section 5
#
R0010:C00053-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:RES_RF     38743.00   31.796 No_date   60:32   20.85  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N6         38743.00   31.737 No_date   62:00   20.85  n/a     .000
      [L/S/n= 3056./ .082/.025]
      {Vmax=  .477:Dmax=  .960}
#
# Addition of Subwatershed 6 and Van Gaal Drain to Node 6
#
R0010:C00054-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N6         38743.00   31.737 No_date   62:00   20.85  n/a     .000
                    +     1.0 02:SW_6         165.00     .818 No_date   33:04   21.69  n/a     .000
                    +     1.0 02:VG_DR       1332.00    6.069 No_date   35:17   24.81  n/a     .000
                 SUM=     1.0 01:S_N6       40240.01   31.737 No_date   62:00   20.99  n/a     .000
#
# Sum of hydrographs from Node 6 routed to Node 5
# Section 6
#
R0010:C00055-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N6       40240.01   31.737 No_date   62:00   20.99  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N5         40240.01   31.713 No_date   62:48   20.99  n/a     .000
      [L/S/n= 1852./ .054/.035]
      {Vmax=  .412:Dmax= 1.069}
#
# Addition of Subwatershed 5 and Flowing Creek to Node 5
#
R0010:C00056-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N5         40240.01   31.713 No_date   62:48   20.99  n/a     .000
                    +     1.0 02:SW_5         224.00    5.246 No_date   28:45   28.24  n/a     .000
                    +     1.0 02:FL_CK       4945.00   28.945 No_date   33:21   25.91  n/a     .000
                 SUM=     1.0 01:S_N5       45409.01   51.448 No_date   34:54   21.56  n/a     .000
#
# Sum of hydrographs from Node 5 routed to Node 5A
# Section 7
#
R0010:C00057-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N5       45409.01   51.448 No_date   34:54   21.56  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N5A        45409.01   51.312 No_date   35:12   21.56  n/a     .000
      [L/S/n=  556./ .090/.040]
      {Vmax=  .485:Dmax= 1.131}
#
# Addition of Subwatershed 5A1 and Subwatershed 5A2 to Node 5A
#
R0010:C00058-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N5A        45409.01   51.312 No_date   35:12   21.56  n/a     .000
                    +     1.0 02:SW_5A2        20.00     .614 No_date   28:36   31.37  n/a     .000
                    +     1.0 02:SW_5A1      1412.00    5.817 No_date   37:54   27.06  n/a     .000
                 SUM=     1.0 01:S_N5A      46841.01   56.788 No_date   35:22   21.73  n/a     .000
#
# Sum of hydrographs from Node 5A routed to Node 4
# Section 8
#
R0010:C00059-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N5A      46841.01   56.788 No_date   35:22   21.73  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N4         46841.01   54.543 No_date   36:56   21.73  n/a     .000
      [L/S/n= 4630./ .043/.035]
      {Vmax=  .793:Dmax= 3.295}
#
# Addition of Subwatershed 4 and Leamy Creek to Node 4
#
R0010:C00060-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N4         46841.01   54.543 No_date   36:56   21.73  n/a     .000
                    +     1.0 02:SW_4         585.00    8.458 No_date   29:57   31.37  n/a     .000
                    +     1.0 02:LM_CK       1021.00   11.195 No_date   30:48   30.72  n/a     .000
                 SUM=     1.0 01:S_N4       48447.00   59.934 No_date   36:12   22.03  n/a     .000
R0010:C00061-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:S_N4       48447.00   59.934 No_date   36:12   22.03  n/a     .000
      fname :S_N4.0010
      remark:flow at S_N4
#
# Sum of hydrographs from Node 4 routed to Node 2
```

```
# Section 9
#
R0010:C00062-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N4       48447.00   59.934 No_date   36:12   22.03  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N2         48447.00   59.699 No_date   36:35   22.03  n/a     .000
      [L/S/n= 1667./ .060/.040]
      {Vmax=  .824:Dmax= 3.325}
#
# Addition of Subwatershed 2 with Monohan Drain and Smith Drain to Node 2
#
R0010:C00063-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N2         48447.00   59.699 No_date   36:35   22.03  n/a     .000
                    +     1.0 02:SW_2         177.00    4.146 No_date   28:45   28.24  n/a     .000
                    +     1.0 02:SM_DR       1122.00   10.275 No_date   31:46   31.37  n/a     .000
                    +     1.0 02:MO_DR       2737.00   22.669 No_date   31:32   27.64  n/a     .000
                 SUM=     1.0 01:S_N2       52483.00   83.235 No_date   33:15   22.55  n/a     .000
R0010:C00064-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:S_N2       52483.00   83.235 No_date   33:15   22.55  n/a     .000
      fname :H_SN2
      remark:flow at S_N2 Jock River Gauge at Moodie Dr.
#
# Sum of hydrographs from Node 2 routed to Node 1
# Section 10
#
#*****************************************************************************
#
# Hydrograph from Node 2 routed to Node 416
# Channel X-Section obtained from RVCA Hydraulic Model - Station 9025
#
R0010:C00065-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N2       52483.00   83.235 No_date   33:15   22.55  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N_416      52483.00   81.216 No_date   34:18   22.55  n/a     .000
      [L/S/n= 2327./ .050/.055]
      {Vmax=  .705:Dmax= 2.943}
#*****************************************************************************
#    Catchment SW-1a
#    - Portion of RVCA catchment SW_1 outside of Reach 1 subwatershed
#    - Undeveloped agricultural land
#*****************************************************************************
R0010:C00066-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_1a        536.42    3.888 No_date   31:17   23.57 .364     .000
      [CN= 72.0: N= 3.00: Tp= 2.79]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
R0010:C00067-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-Okeefe    44.93    5.420 No_date   28:03   48.63 .752     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .75:LGI= 547.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0010:C00068-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:S-1-Okeefe    44.93    5.420 No_date   28:03   48.63  n/a     .000
     Major System   /     1.0 02:S-1-OkMJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:S-1-OkMN      44.93    4.591 No_date   27:58   48.66  n/a     .000
      {MjSysSto=.3168E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00069-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:S-1-OkMJ        .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:S-1-OkMN      44.93    4.591 No_date   27:58   48.66  n/a     .000
                 SUM=     1.0 01:S-1-OkS       44.93    4.591 No_date   27:58   48.66  n/a     .000
R0010:C00070-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:S-1-OkS       44.93    4.591 No_date   27:58   48.66  n/a     .000
                out <=    1.0 01:S-1-OkSR      44.93     .393 No_date   29:29   48.66  n/a     .000
           overflow <=    1.0 03:S-1-OkSovf      .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.1312E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00071-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N_416      52483.00   81.216 No_date   34:18   22.55  n/a     .000
                    +     1.0 02:SW_1a        536.42    3.888 No_date   31:17   23.57  n/a     .000
                    +     1.0 02:S-1-OkSR      44.93     .393 No_date   29:29   48.66  n/a     .000
                    +     1.0 02:S-1-OkSovf      .00     .000 No_date    0:00     .00  n/a     .000
                 SUM=     1.0 01:SN_416     53064.36   84.340 No_date   33:41   22.58  n/a     .000
R0010:C00072-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_416     53064.36   84.340 No_date   33:41   22.58  n/a     .000
      fname :SN_416.0010
      remark:Total Flows at Highway 416 before Station 7245
#
# Hydrograph from Node 416 routed to Node at Okeefe drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 7245
#
R0010:C00073-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_416     53064.36   84.340 No_date   33:41   22.58  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N_OK       53064.36   84.256 No_date   33:41   22.58  n/a     .000
      [L/S/n=  497./ .302/.055]
      {Vmax= 1.451:Dmax= 2.498}
#*****************************************************************************
#    Catchment OKEEFE
#    - To O'Keefe drain (north of the Jock)
#    - Developed with assumed 43% imp.
#    - 2020-12-01 add Okeefe model (Area 513.02 HA) instead of current Okeefe (Area 513.02 HA)
#    - 2020-11-20 Okeefe detailed model was added as per the NOVATECH SWMHYMO model (Citi-Gate 2014).
#*****************************************************************************
R0010:C00074-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:O-1           63.72     .684 No_date   28:58   17.24 .266     .000
      [CN= 61.0: N= 3.00: Tp=  .90]
      [IaREC= 4.00: SMIN= 64.50: SMAX=430.01: SK= .010]
      [InterEventTime=  12.00]
R0010:C00075-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:O-1           63.72     .684 No_date   28:58   17.24  n/a     .000
     [RDT= 1.00] out<-    1.0 01:O-1R          63.72     .637 No_date   29:17   17.24  n/a     .000
      [L/S/n=  960./ .630/.043]
      {Vmax=  .755:Dmax=  .334}
R0010:C00076-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:O-2           28.61     .242 No_date   29:13   16.01 .248     .000
      [CN= 57.0: N= 3.00: Tp= 1.10]
      [IaREC= 4.00: SMIN= 76.32: SMAX=508.81: SK= .010]
      [InterEventTime=  12.00]
R0010:C00077-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:O-4           46.94     .303 No_date   29:00   12.15 .188     .000
      [CN= 49.0: N= 3.00: Tp=  .90]
      [IaREC= 4.00: SMIN=104.59: SMAX=697.25: SK= .010]
      [InterEventTime=  12.00]
R0010:C00078-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:O-1R          63.72     .637 No_date   29:17   17.24  n/a     .000
                    +     1.0 02:O-2           28.61     .242 No_date   29:13   16.01  n/a     .000
                    +     1.0 02:O-4           46.94     .303 No_date   29:00   12.15  n/a     .000
                 SUM=     1.0 01:OKF-N        139.27    1.172 No_date   29:12   15.27  n/a     .000
R0010:C00079-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:OKF-N        139.27    1.172 No_date   29:12   15.27  n/a     .000
     [RDT= 1.00] out<-    1.0 01:OKF-NR       139.27    1.170 No_date   29:16   15.27  n/a     .000
      [L/S/n=  210./ .810/.043]
      {Vmax=  .916:Dmax=  .609}
R0010:C00080-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:O-6           16.46     .101 No_date   28:45   10.60 .164     .000
      [CN= 43.0: N= 3.00: Tp=  .70]
      [IaREC= 4.00: SMIN=134.47: SMAX=896.47: SK= .010]
      [InterEventTime=  12.00]
R0010:C00081-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:O-3           39.67     .767 No_date   28:24   19.36 .299     .000
      [XIMP=.15:TIMP=.30]
      [LOSS= 2 :CN= 50.0]
      [Pervious     area: IAper= 4.67:SLPP= .32:LGP= 440.:MNP=.035:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .32:LGI=1880.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 99.77: SMAX=665.12: SK= .010]
R0010:C00082-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:O-5           60.63    1.881 No_date   28:10   22.00 .340     .000
      [XIMP=.13:TIMP=.26]
      [LOSS= 2 :CN= 61.0]
      [Pervious     area: IAper= 4.67:SLPP=1.38:LGP= 550.:MNP=.035:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.38:LGI=1450.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 64.50: SMAX=430.01: SK= .010]
R0010:C00083-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:OKF-NR       139.27    1.170 No_date   29:16   15.27  n/a     .000
                    +     1.0 02:O-3           39.67     .767 No_date   28:24   19.36  n/a     .000
                    +     1.0 02:O-5           60.63    1.881 No_date   28:10   22.00  n/a     .000
                    +     1.0 02:O-6           16.46     .101 No_date   28:45   10.60  n/a     .000
                 SUM=     1.0 01:PT1          256.03    3.008 No_date   28:23   17.20  n/a     .000
R0010:C00084-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:O-7            5.28     .056 No_date   28:37   14.05 .217     .000
      [CN= 54.0: N= 3.00: Tp=  .60]
      [IaREC= 4.00: SMIN= 87.01: SMAX=580.07: SK= .010]
      [InterEventTime=  12.00]
R0010:C00085-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:PT1          256.03    3.008 No_date   28:23   17.20  n/a     .000
                    +     1.0 02:O-7            5.28     .056 No_date   28:37   14.05  n/a     .000
                 SUM=     1.0 01:FF           261.31    3.058 No_date   28:23   17.14  n/a     .000
R0010:C00086-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:FF           261.31    3.058 No_date   28:23   17.14  n/a     .000
     [RDT= 1.00] out<-    1.0 01:DRAIN1       261.31    2.972 No_date   28:31   17.14  n/a     .000
      [L/S/n=  302./1.000/.043]
      {Vmax=  .783:Dmax=  .667}
R0010:C00087-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:D1             1.17     .058 No_date   28:12   29.30 .453     .000
      [CN= 84.0: N= 3.00: Tp=  .28]
      [IaREC= 4.00: SMIN= 21.09: SMAX=140.62: SK= .010]
      [InterEventTime=  12.00]
R0010:C00088-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A1             2.50     .391 No_date   28:01   50.29 .777     .000
      [XIMP=.68:TIMP=.85]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 224.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00089-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:A1             2.50     .391 No_date   28:01   50.29  n/a     .000
                out <=    1.0 01:A1-STR         2.50     .098 No_date   28:24   50.29  n/a     .000
           overflow <=    1.0 03:A1-OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.5829E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00090-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:ST-2            .59     .075 No_date   28:00   38.69 .598     .000
      [XIMP=.46:TIMP=.57]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 109.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
```

```
R0010:C00091------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:ST-2              .59      .075 No_date   28:00   38.69  n/a      .000
                out <=    1.0 01:ST2STR            .59      .052 No_date   28:05   38.69  n/a      .000
           overflow <=    1.0 03:ST2OVF            .00      .000 No_date    0:00     .00  n/a      .000
      {MxStoUsed=.1835E-02  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00092------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:O-8             60.55      .857 No_date   29:04   22.40 .346      .000
       [CN= 69.0: N= 3.00: Tp= 1.00]
       [IaREC= 4.00: SMIN= 44.82: SMAX=298.82: SK= .010]
       [InterEventTime=  12.00]
R0010:C00093------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:O-8             60.55      .857 No_date   29:04   22.40  n/a      .000
      [RDT= 1.00] out<-   1.0 01:O8PIPE          60.55      .852 No_date   29:08   22.40  n/a      .000
       [L/S/n=  335./ .100/.013]
       {Vmax= 1.080:Dmax=  .441}
       {HGTH= 1.20:WDTH= 1.80}
R0010:C00094------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:DRAIN1         261.31     2.972 No_date   28:31   17.14  n/a      .000
                    +     1.0 02:D1               1.17      .058 No_date   28:12   29.30  n/a      .000
                    +     1.0 02:A1-STR           2.50      .098 No_date   28:24   50.29  n/a      .000
                    +     1.0 02:A1-OVF            .00      .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:ST2STR            .59      .052 No_date   28:05   38.69  n/a      .000
                    +     1.0 02:ST2OVF            .00      .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:O8PIPE          60.55      .852 No_date   29:08   22.40  n/a      .000
                 SUM=     1.0 01:ST2-IN         326.12     3.771 No_date   28:40   18.45  n/a      .000
R0010:C00095------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A7               3.51      .538 No_date   28:01   50.29 .777      .000
       [XIMP=.68:TIMP=.85]
       [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
       [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 265.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00096------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:A7               3.51      .538 No_date   28:01   50.29  n/a      .000
                out <=    1.0 01:A7-STR           3.51      .139 No_date   28:25   50.29  n/a      .000
           overflow <=    1.0 03:A7-OVF            .00      .000 No_date    0:00     .00  n/a      .000
      {MxStoUsed=.8167E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00097------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:ST-3              .71      .089 No_date   28:00   38.69 .598      .000
       [XIMP=.46:TIMP=.57]
       [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
       [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 119.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00098------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:ST-3              .71      .089 No_date   28:00   38.69  n/a      .000
                out <=    1.0 01:ST3STR            .71      .063 No_date   28:05   38.69  n/a      .000
           overflow <=    1.0 03:ST3OVF            .00      .000 No_date    0:00     .00  n/a      .000
      {MxStoUsed=.1988E-02  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00099------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:ST2-IN         326.12     3.771 No_date   28:40   18.45  n/a      .000
                    +     1.0 02:A7-STR           3.51      .139 No_date   28:25   50.29  n/a      .000
                    +     1.0 02:A7-OVF            .00      .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:ST3STR            .71      .063 No_date   28:05   38.69  n/a      .000
                    +     1.0 02:ST3OVF            .00      .000 No_date    0:00     .00  n/a      .000
                 SUM=     1.0 01:PT2ST3         330.34     3.914 No_date   28:39   18.83  n/a      .000
R0010:C00100------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:PT2ST3         330.34     3.914 No_date   28:39   18.83  n/a      .000
      [RDT= 1.00] out<-   1.0 01:DRAIN2         330.34     3.640 No_date   29:01   18.83  n/a      .000
       [L/S/n=  592./ .230/.043]
       {Vmax=  .582:Dmax= 1.002}
R0010:C00101------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:D2               2.28      .046 No_date   29:04   29.30 .453      .000
       [CN= 84.0: N= 3.00: Tp=  .99]
       [IaREC= 4.00: SMIN= 21.09: SMAX=140.62: SK= .010]
       [InterEventTime=  12.00]
R0010:C00102------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A17             12.04     1.618 No_date   28:04   50.29 .777      .000
       [XIMP=.68:TIMP=.85]
       [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
       [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 491.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00103------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:A17             12.04     1.618 No_date   28:04   50.29  n/a      .000
                out <=    1.0 01:A17STR          12.04      .460 No_date   28:31   50.29  n/a      .000
           overflow <=    1.0 03:A17OVF            .00      .000 No_date    0:00     .00  n/a      .000
      {MxStoUsed=.2771E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00104------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:ST-4              .35      .046 No_date   28:00   38.69 .598      .000
       [XIMP=.46:TIMP=.57]
       [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
       [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=  84.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00105------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:ST-4              .35      .046 No_date   28:00   38.69  n/a      .000
                out <=    1.0 01:ST4STR            .35      .031 No_date   28:04   38.69  n/a      .000
           overflow <=    1.0 03:ST4OVF            .00      .000 No_date    0:00     .00  n/a      .000
      {MxStoUsed=.1424E-02  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00106------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A18              5.30      .780 No_date   28:02   50.29 .777      .000
       [XIMP=.68:TIMP=.85]
       [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
       [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 326.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00107------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:A18              5.30      .780 No_date   28:02   50.29  n/a      .000
                out <=    1.0 01:A18STR           5.30      .206 No_date   28:27   50.29  n/a      .000
           overflow <=    1.0 03:A18OVF            .00      .000 No_date    0:00     .00  n/a      .000
      {MxStoUsed=.1232E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00108------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:DRAIN2         330.34     3.640 No_date   29:01   18.83  n/a      .000
                    +     1.0 02:D2               2.28      .046 No_date   29:04   29.30  n/a      .000
                    +     1.0 02:A17STR          12.04      .460 No_date   28:31   50.29  n/a      .000
                    +     1.0 02:A17OVF            .00      .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:ST4STR            .35      .031 No_date   28:04   38.69  n/a      .000
                    +     1.0 02:ST4OVF            .00      .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:A18STR           5.30      .206 No_date   28:27   50.29  n/a      .000
                    +     1.0 02:A18OVF            .00      .000 No_date    0:00     .00  n/a      .000
                 SUM=     1.0 01:PT3ST4         350.31     4.213 No_date   28:57   20.48  n/a      .000
R0010:C00109------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:PT3ST4         350.31     4.213 No_date   28:57   20.48  n/a      .000
      [RDT= 1.00] out<-   1.0 01:DRAIN3         350.31     4.037 No_date   29:17   20.48  n/a      .000
       [L/S/n=  525./ .230/.043]
       {Vmax=  .606:Dmax= 1.049}
R0010:C00110------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:D3               2.51      .072 No_date   28:44   32.13 .497      .000
       [CN= 86.0: N= 3.00: Tp=  .73]
       [IaREC= 4.00: SMIN= 17.43: SMAX=116.21: SK= .010]
       [InterEventTime=  12.00]
R0010:C00111------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:C1               3.41      .523 No_date   28:01   50.29 .777      .000
       [XIMP=.68:TIMP=.85]
       [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
       [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 261.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00112------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:C1               3.41      .523 No_date   28:01   50.29  n/a      .000
                out <=    1.0 01:C1-STR           3.41      .133 No_date   28:25   50.29  n/a      .000
           overflow <=    1.0 03:C1-OVF            .00      .000 No_date    0:00     .00  n/a      .000
      {MxStoUsed=.7930E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00113------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:ST-5              .45      .058 No_date   28:00   38.69 .598      .000
       [XIMP=.46:TIMP=.57]
       [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
       [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=  95.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00114------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:ST-5              .45      .058 No_date   28:00   38.69  n/a      .000
                out <=    1.0 01:ST5STR            .45      .040 No_date   28:04   38.69  n/a      .000
           overflow <=    1.0 03:ST5OVF            .00      .000 No_date    0:00     .00  n/a      .000
      {MxStoUsed=.1552E-02  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00115------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:DRAIN3         350.31     4.037 No_date   29:17   20.48  n/a      .000
                    +     1.0 02:D3               2.51      .072 No_date   28:44   32.13  n/a      .000
                    +     1.0 02:C1-STR           3.41      .133 No_date   28:25   50.29  n/a      .000
                    +     1.0 02:C1-OVF            .00      .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:ST5STR            .45      .040 No_date   28:04   38.69  n/a      .000
                    +     1.0 02:ST5OVF            .00      .000 No_date    0:00     .00  n/a      .000
                 SUM=     1.0 01:ST5-E          356.68     4.181 No_date   29:15   20.87  n/a      .000
R0010:C00116------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:STRAND           7.59      .759 No_date   28:11   49.05 .758      .000
       [XIMP=.64:TIMP=.85]
       [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
       [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1230.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00117------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:STRAND           7.59      .759 No_date   28:11   49.05  n/a      .000
                out <=    1.0 01:S-POND           7.59      .066 No_date   29:41   49.05  n/a      .000
           overflow <=    1.0 03:S-OVF             .00      .000 No_date    0:00     .00  n/a      .000
      {MxStoUsed=.2593E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00118------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:ST5-E          356.68     4.181 No_date   29:15   20.87  n/a      .000
                    +     1.0 02:S-POND           7.59      .066 No_date   29:41   49.05  n/a      .000
                    +     1.0 02:S-OVF             .00      .000 No_date    0:00     .00  n/a      .000
                 SUM=     1.0 01:SSAOUT         364.27     4.242 No_date   29:15   21.45  n/a      .000
R0010:C00119------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SSAOUT         364.27     4.242 No_date   29:15   21.45  n/a      .000
       fname :SSAOUT.0010
       remark:SSAOUT
R0010:C00120------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:Area-A          66.75     6.470 No_date   28:10   48.24 .746      .000
       [XIMP=.64:TIMP=.80]
       [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
       [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1155.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00121------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:Area-A          66.75     6.470 No_date   28:10   48.24  n/a      .000
       fname :Area-A.0010
       remark:SMWF-A Inflow
R0010:C00122------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:Area-A          66.75     6.470 No_date   28:10   48.24  n/a      .000
                out <=    1.0 01:SWMF-A          66.75      .465 No_date   29:54   48.24  n/a      .000
           overflow <=    1.0 03:SWMAOV            .00      .000 No_date    0:00     .00  n/a      .000
      {MxStoUsed=.2359E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00123------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SWMF-A          66.75      .465 No_date   29:54   48.24  n/a      .000
       fname :SWMF-A.0010
       remark:SMWF-A Outflow
R0010:C00124------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:SSAOUT         364.27     4.242 No_date   29:15   21.45  n/a      .000
                    +     1.0 02:SWMF-A          66.75      .465 No_date   29:54   48.24  n/a      .000
                    +     1.0 02:SWMAOV            .00      .000 No_date    0:00     .00  n/a      .000
                 SUM=     1.0 01:PT4ST5         431.02     4.657 No_date   29:18   25.60  n/a      .000
R0010:C00125------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:C6               1.87      .301 No_date   28:01   50.29 .777      .000
       [XIMP=.68:TIMP=.85]
       [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
       [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 193.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00126------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:C6               1.87      .301 No_date   28:01   50.29  n/a      .000
                out <=    1.0 01:C6-STR           1.87      .074 No_date   28:22   50.29  n/a      .000
           overflow <=    1.0 03:C6-OVF            .00      .000 No_date    0:00     .00  n/a      .000
      {MxStoUsed=.4376E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00127------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:C7               1.62      .262 No_date   28:01   50.29 .777      .000
       [XIMP=.68:TIMP=.85]
       [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
       [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 180.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00128------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:C7               1.62      .262 No_date   28:01   50.29  n/a      .000
                out <=    1.0 01:C7-STR           1.62      .064 No_date   28:22   50.29  n/a      .000
           overflow <=    1.0 03:C7-OVF            .00      .000 No_date    0:00     .00  n/a      .000
      {MxStoUsed=.3781E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00129------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:ST-6              .41      .053 No_date   28:00   38.69 .598      .000
       [XIMP=.46:TIMP=.57]
       [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
       [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=  91.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00130------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:ST-6              .41      .053 No_date   28:00   38.69  n/a      .000
                out <=    1.0 01:ST6STR            .41      .036 No_date   28:04   38.69  n/a      .000
           overflow <=    1.0 03:ST6OVF            .00      .000 No_date    0:00     .00  n/a      .000
      {MxStoUsed=.1514E-02  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00131------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:PT4ST5         431.02     4.657 No_date   29:18   25.60  n/a      .000
                    +     1.0 02:C6-STR           1.87      .074 No_date   28:22   50.29  n/a      .000
                    +     1.0 02:C6-OVF            .00      .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:C7-STR           1.62      .064 No_date   28:22   50.29  n/a      .000
                    +     1.0 02:C7-OVF            .00      .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:ST6STR            .41      .036 No_date   28:04   38.69  n/a      .000
                    +     1.0 02:ST6OVF            .00      .000 No_date    0:00     .00  n/a      .000
                 SUM=     1.0 01:PT5ST6         434.92     4.740 No_date   29:18   25.81  n/a      .000
R0010:C00132------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:PT5ST6         434.92     4.740 No_date   29:18   25.81  n/a      .000
      [RDT= 1.00] out<-   1.0 01:DRAIN4         434.92     4.599 No_date   29:31   25.81  n/a      .000
       [L/S/n=  324./ .100/.043]
       {Vmax=  .468:Dmax= 1.312}
R0010:C00133------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:D4               1.73      .063 No_date   28:35   34.48 .533      .000
       [CN= 88.0: N= 3.00: Tp=  .60]
       [IaREC= 4.00: SMIN= 14.94: SMAX= 99.61: SK= .010]
       [InterEventTime=  12.00]
R0010:C00134------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:Area-B          24.04     3.287 No_date   28:03   47.09 .728      .000
       [XIMP=.62:TIMP=.77]
       [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
       [Pervious     area: IAper= 4.67:SLPP=1.40:LGP=  50.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI=1.40:LGI= 693.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00135------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:Area-B          24.04     3.287 No_date   28:03   47.09  n/a      .000
                out <=    1.0 01:SWMF-B          24.04      .356 No_date   28:50   47.09  n/a      .000
           overflow <=    1.0 03:SWMBOVF           .00      .000 No_date    0:00     .00  n/a      .000
      {MxStoUsed=.7142E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00136------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:DRAIN4         434.92     4.599 No_date   29:31   25.81  n/a      .000
                    +     1.0 02:D4               1.73      .063 No_date   28:35   34.48  n/a      .000
                    +     1.0 02:SWMF-B          24.04      .356 No_date   28:50   47.09  n/a      .000
                    +     1.0 02:SWMBOVF           .00      .000 No_date    0:00     .00  n/a      .000
                 SUM=     1.0 01:D4-EX          460.69     4.958 No_date   29:31   26.95  n/a      .000
R0010:C00137------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:D4-EX          460.69     4.958 No_date   29:31   26.95  n/a      .000
      [RDT= 1.00] out<-   1.0 01:DRAIN5         460.69     4.881 No_date   29:37   26.95  n/a      .000
       [L/S/n=  413./ .160/.033]
       {Vmax=  .599:Dmax=  .896}
R0010:C00138------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:D5               1.90      .057 No_date   28:41   32.13 .497      .000
       [CN= 86.0: N= 3.00: Tp=  .69]
       [IaREC= 4.00: SMIN= 17.43: SMAX=116.21: SK= .010]
       [InterEventTime=  12.00]
R0010:C00139------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:O-13SDF          9.74      .371 No_date   28:22   30.32 .469      .000
       [CN= 81.0: N= 3.00: Tp=  .43]
       [IaREC= 4.00: SMIN= 25.21: SMAX=168.09: SK= .010]
       [InterEventTime=  12.00]
R0010:C00140------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:O-13SDF          9.74      .371 No_date   28:22   30.32  n/a      .000
                out <=    1.0 01:SDF              9.74      .040 No_date   31:17   30.32  n/a      .000
           overflow <=    1.0 03:OVFSDF            .00      .000 No_date    0:00     .00  n/a      .000
      {MxStoUsed=.1596E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00141------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:DRAIN5         460.69     4.881 No_date   29:37   26.95  n/a      .000
                    +     1.0 02:D5               1.90      .057 No_date   28:41   32.13  n/a      .000
                    +     1.0 02:SDF              9.74      .040 No_date   31:17   30.32  n/a      .000
                 SUM=     1.0 01:PT6MC          472.33     4.951 No_date   29:37   27.04  n/a      .000
R0010:C00142------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:O-15            10.67      .502 No_date   28:13   29.12 .450      .000
       [CN= 82.0: N= 3.00: Tp=  .30]
       [IaREC= 4.00: SMIN= 23.09: SMAX=153.94: SK= .010]
       [InterEventTime=  12.00]
R0010:C00143------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:PT6MC          472.33     4.951 No_date   29:37   27.04  n/a      .000
                    +     1.0 02:O-15            10.67      .502 No_date   28:13   29.12  n/a      .000
                 SUM=     1.0 01:M-C            483.00     5.029 No_date   29:36   27.09  n/a      .000
R0010:C00144------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:M-C            483.00     5.029 No_date   29:36   27.09  n/a      .000
      [RDT= 1.00] out<-   1.0 01:O-14Ch         483.00     4.686 No_date   30:11   27.09  n/a      .000
       [L/S/n=  845./ .100/.033]
       {Vmax=  .618:Dmax= 1.565}
R0010:C00145------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:O-14             5.00      .389 No_date   28:04   29.12 .450      .000
       [CN= 82.0: N= 3.00: Tp=  .13]
       [IaREC= 4.00: SMIN= 23.09: SMAX=153.94: SK= .010]
       [InterEventTime=  12.00]
R0010:C00146------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:O-14Ch         483.00     4.686 No_date   30:11   27.09  n/a      .000
                    +     1.0 02:O-14             5.00      .389 No_date   28:04   29.12  n/a      .000
                 SUM=     1.0 01:OKEEFE         488.00     4.709 No_date   30:11   27.11  n/a      .000
#*****************************************************************************
#    Okeefe Pond
#     - Rating curve obtained assuming 40m3/ha in 24 hours for quality control
#       and a ratio of the catchment area to the West Clarke pond rating curve
#       from the MSS for the next coordinates
#*****************************************************************************
R0010:C00147------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-D2          18.67     2.448 No_date   28:02   48.63 .752      .000
       [XIMP=.65:TIMP=.65]
       [LOSS= 2 :CN= 75.0]
       [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .75:LGI= 353.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 33.81: SMAX=225.43: SK= .010]
R0010:C00148------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:S-1-D2          18.67     2.448 No_date   28:02   48.63  n/a      .000
     Major System   /     1.0 02:S-1-D2J           .00      .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:S-1-D2N         18.67     2.097 No_date   27:58   48.63  n/a      .000
      {MjSysSto=.1167E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00149------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:S-1-D2J           .00      .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:S-1-D2N         18.67     2.097 No_date   27:58   48.63  n/a      .000
                 SUM=     1.0 01:S-1-D2S         18.67     2.097 No_date   27:58   48.63  n/a      .000
R0010:C00150------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:S-1-D2S         18.67     2.097 No_date   27:58   48.63  n/a      .000
                out <=    1.0 01:S-1-D2R         18.67      .163 No_date   29:23   48.63  n/a      .000
           overflow <=    1.0 03:S-1-D2Rovf        .00      .000 No_date    0:00     .00  n/a      .000
      {MxStoUsed=.5451E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00151------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-D3           6.79      .967 No_date   28:01   48.63 .752      .000
       [XIMP=.65:TIMP=.65]
       [LOSS= 2 :CN= 75.0]
       [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .75:LGI= 213.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 33.81: SMAX=225.43: SK= .010]
R0010:C00152------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:S-1-D3           6.79      .967 No_date   28:01   48.63  n/a      .000
     Major System   /     1.0 02:S-1-D3J           .00      .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:S-1-D3N          6.79      .831 No_date   27:57   48.93  n/a      .000
      {MjSysSto=.3980E+02, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00153------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:S-1-D3J           .00      .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:S-1-D3N          6.79      .831 No_date   27:57   48.93  n/a      .000
                 SUM=     1.0 01:S-1-D3S          6.79      .831 No_date   27:57   48.93  n/a      .000
R0010:C00154------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:S-1-D3S          6.79      .831 No_date   27:57   48.93  n/a      .000
                out <=    1.0 01:S-1-D3R          6.79      .060 No_date   29:16   48.93  n/a      .000
           overflow <=    1.0 03:S-1-D3Rovf        .00      .000 No_date    0:00     .00  n/a      .000
      {MxStoUsed=.2002E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00155------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N_OK         53064.36    84.256 No_date   33:41   22.58  n/a      .000
                    +     1.0 02:OKEEFE         488.00     4.709 No_date   30:11   27.11  n/a      .000
```

```
                    +     1.0 02:S-1-D2R       18.67     .163 No_date   29:23   48.63  n/a     .000
                    +     1.0 02:S-1-D3R        6.79     .060 No_date   29:16   48.93  n/a     .000
                    +     1.0 02:S-1-D2Rovf      .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:S-1-D3Rovf      .00     .000 No_date    0:00     .00  n/a     .000
                 SUM=     1.0 01:SN_OK      53577.82   86.110 No_date   33:41   22.63  n/a     .000
R0010:C00156------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_OK      53577.82   86.110 No_date   33:41   22.63  n/a     .000
      fname :SN_OK.0010
      remark:Total Flows at Okeefe Drain
#
# Hydrograph from Node Okeefe routed to Node at Foster Drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 6215
#
R0010:C00157------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_OK      53577.82   86.110 No_date   33:41   22.63  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N_FO       53577.82   85.870 No_date   34:07   22.63  n/a     .000
      [L/S/n= 1183./ .076/.035]
      {Vmax= 1.104:Dmax= 2.866}
#***************************************************************************
#    Catchment FOSTER
#    - To Foster ditch (north of the Jock)
#    - Partially developed (medium density); remaining agricultural
#    - 2020-12-01 JFSA Foster area is 332 as per Foster SWMF Environmental Study Report, CH2MHILL, Aug 2013.
#    - 2020-12-01 decrease Foster drainage area from (373 HA) to (307.98 HA) after increasing Okeefe drainage area to (5
#    - 2021-02-12  update Foster area to 325.44 ha as measured from QGIS
#***************************************************************************
R0010:C00158------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:FOSTER       325.44   22.870 No_date   28:13   43.99 .680     .000
      [XIMP=.55:TIMP=.55]
      [LOSS= 2 :CN= 74.0]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1473.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 36.67: SMAX=244.49: SK= .010]
#***************************************************************************
#    Foster Pond
#    - Rating curve obtained assuming 40m3/ha in 24 hours for quality control
#      and a ratio of the catchment area to the West Clarke pond rating curve
#      from the MSS for the next coordinates
#***************************************************************************
R0010:C00159------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:FOSTER       325.44   22.870 No_date   28:13   43.99  n/a     .000
                out <=    1.0 01:P_FOS        325.44    6.061 No_date   29:06   43.99  n/a     .000
           overflow <=    1.0 03:FO-OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.5862E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00160------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:P_FOS        325.44    6.061 No_date   29:06   43.99  n/a     .000
                    +     1.0 02:FO-OVF          .00     .000 No_date    0:00     .00  n/a     .000
                 SUM=     1.0 01:FOSTER-OUT   325.44    6.061 No_date   29:06   43.99  n/a     .000
#***************************************************************************
R0010:C00161------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:W_CLAR_BRA    73.29    7.523 No_date   28:05   47.94 .741     .000
      [XIMP=.60:TIMP=.65]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 699.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0010:C00162------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:W_CLAR_BRA    73.29    7.523 No_date   28:05   47.94  n/a     .000
                out <=    1.0 01:MS_P10        73.29    1.136 No_date   29:00   47.94  n/a     .000
           overflow <=    1.0 03:P10-OVF         .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.1341E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00163------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-FO-D2      4.94     .594 No_date   28:01   43.99 .680     .000
      [XIMP=.55:TIMP=.55]
      [LOSS= 2 :CN= 74.0]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 181.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 36.67: SMAX=244.49: SK= .010]
R0010:C00164------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:S-1-FO-D2      4.94     .594 No_date   28:01   43.99  n/a     .000
     Major System   /     1.0 02:S-1-FO-D2J      .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:S-1-FO-D2N     4.94     .508 No_date   27:57   44.15  n/a     .000
      {MjSysSto=.2536E+02, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00165------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:S-1-FO-D2J      .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:S-1-FO-D2N     4.94     .508 No_date   27:57   44.15  n/a     .000
                 SUM=     1.0 01:S-1-FO-D2S     4.94     .508 No_date   27:57   44.15  n/a     .000
R0010:C00166------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:S-1-FO-D2S     4.94     .508 No_date   27:57   44.15  n/a     .000
                out <=    1.0 01:S-1-FO-D2R     4.94     .039 No_date   29:33   44.15  n/a     .000
           overflow <=    1.0 03:S-1FOD2ovf      .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.1298E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00167------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:FOSTER-OUT   325.44    6.061 No_date   29:06   43.99  n/a     .000
                    +     1.0 02:S-1-FO-D2R     4.94     .039 No_date   29:33   44.15  n/a     .000
                    +     1.0 02:S-1FOD2ovf      .00     .000 No_date    0:00     .00  n/a     .000
                 SUM=     1.0 01:980          330.38    6.100 No_date   29:06   43.99  n/a     .000
R0010:C00168------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:980          330.38    6.100 No_date   29:06   43.99  n/a     .000
      fname :980.0010
      remark:Total Flows at Station 980 on Foster Drain
#
# Hydrograph from Node Foster SWM (Station 980)to Node at station 520
# Channel X-Section obtained from RVCA Hydraulic Model - Station 980
#
R0010:C00169------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:980          330.38    6.100 No_date   29:06   43.99  n/a     .000
     [RDT= 1.00] out<-    1.0 01:980-out      330.38    5.927 No_date   29:17   43.99  n/a     .000
      [L/S/n=  460./ .043/.035]
      {Vmax=  .634:Dmax= 1.379}
R0010:C00170------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-FO-D1      5.11     .702 No_date   28:00   48.24 .746     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 74.0]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 185.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 36.67: SMAX=244.49: SK= .010]
R0010:C00171------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:S-1-FO-D1      5.11     .702 No_date   28:00   48.24  n/a     .000
     Major System   /     1.0 02:S-1-FO-D1J      .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:S-1-FO-D1N     5.11     .605 No_date   28:07   48.27  n/a     .000
      {MjSysSto=.2822E+02, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00172------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:S-1-FO-D1N     5.11     .605 No_date   27:57   48.27  n/a     .000
                    +     1.0 02:S-1-FO-D1J      .00     .000 No_date    0:00     .00  n/a     .000
                 SUM=     1.0 01:S-1-FO-D1S     5.11     .605 No_date   27:57   48.27  n/a     .000
R0010:C00173------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:S-1-FO-D1S     5.11     .605 No_date   27:57   48.27  n/a     .000
                out <=    1.0 01:S-1-FO-D1R     5.11     .044 No_date   29:26   48.27  n/a     .000
           overflow <=    1.0 03:S-1FOD1ovf      .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.1478E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00174------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:980-out      330.38    5.927 No_date   29:17   43.99  n/a     .000
                    +     1.0 02:S-1-FO-D1R     5.11     .044 No_date   29:26   48.27  n/a     .000
                    +     1.0 02:S-1FOD1ovf      .00     .000 No_date    0:00     .00  n/a     .000
                 SUM=     1.0 01:520          335.49    5.972 No_date   29:17   44.06  n/a     .000
R0010:C00175------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:520          335.49    5.972 No_date   29:17   44.06  n/a     .000
      fname :520.0010
      remark:Total Flows at Sation 520 on Foster Drain
# Hydrograph from Node at Station 520 (Foster Drain) to Node at station 6016 (Jock River)
# Channel X-Section obtained from RVCA Hydraulic Model - Station 520
#
R0010:C00176------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:520          335.49    5.972 No_date   29:17   44.06  n/a     .000
     [RDT= 1.00] out<-    1.0 01:520-out      335.49    5.909 No_date   29:24   44.06  n/a     .000
      [L/S/n=  860./ .587/.035]
      {Vmax= 1.391:Dmax=  .659}
R0010:C00177------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-FO-F-D    14.96    1.881 No_date   28:02   48.24 .746     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 74.0]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 316.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 36.67: SMAX=244.49: SK= .010]
R0010:C00178------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:S-1-FO-F-D    14.96    1.881 No_date   28:02   48.24  n/a     .000
     Major System   /     1.0 02:S-1FO-F-DJ      .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:S-1FO-F-DN    14.96    1.615 No_date   27:58   48.25  n/a     .000
      {MjSysSto=.8828E+02, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00179------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:S-1FO-F-DJ      .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:S-1FO-F-DN    14.96    1.615 No_date   27:58   48.25  n/a     .000
                 SUM=     1.0 01:S-1FO-F-DS    14.96    1.615 No_date   27:58   48.25  n/a     .000
R0010:C00180------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:S-1FO-F-DS    14.96    1.615 No_date   27:58   48.25  n/a     .000
                out <=    1.0 01:S-1FO-F-DR    14.96     .130 No_date   29:31   48.25  n/a     .000
           overflow <=    1.0 03:S-1FoFDovf      .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.4323E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00181------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-D8         5.27     .781 No_date   28:01   35.83 .554     .000
      [XIMP=.32:TIMP=.65]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI= .75:LGI= 187.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00182------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:S-1-D8         5.27     .781 No_date   28:01   35.83  n/a     .000
     Major System   /     1.0 02:S-1-D8J         .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:S-1-D8N        5.27     .672 No_date   27:58   35.92  n/a     .000
      {MjSysSto=.3074E+02, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00183------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:S-1-D8J         .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:S-1-D8N        5.27     .672 No_date   27:58   35.92  n/a     .000
                 SUM=     1.0 01:S-1-D8S        5.27     .672 No_date   27:58   35.92  n/a     .000
R0010:C00184------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:S-1-D8S        5.27     .672 No_date   27:58   35.92  n/a     .000
                out <=    1.0 01:S-1-D8R        5.27     .042 No_date   28:48   35.92  n/a     .000
           overflow <=    1.0 03:S-1-D8Rovf      .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.1398E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00185------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:S-1-A         75.88    1.915 No_date   28:36   26.85 .415     .000
      [CN= 77.0: N= 3.00: Tp=  .62]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0010:C00186------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:W_CLAR_UND    35.65     .596 No_date   29:11   26.85 .415     .000
      [CN= 77.0: N= 3.00: Tp= 1.10]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0010:C00187------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N_FO       53577.82   85.870 No_date   34:07   22.63  n/a     .000
                    +     1.0 02:520-out      335.49    5.909 No_date   29:24   44.06  n/a     .000
                    +     1.0 02:MS_P10        73.29    1.136 No_date   29:00   47.94  n/a     .000
                    +     1.0 02:P10-OVF         .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:W_CLAR_UND    35.65     .596 No_date   29:11   26.85  n/a     .000
                    +     1.0 02:S-1FoFDovf      .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:S-1FO-F-DR    14.96     .130 No_date   29:31   48.25  n/a     .000
                    +     1.0 02:S-1-D8Rovf      .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:S-1-D8R        5.27     .042 No_date   28:48   35.92  n/a     .000
                    +     1.0 02:S-1-A         75.88    1.915 No_date   28:36   26.85  n/a     .000
                 SUM=     1.0 01:SN_FO      54118.36   89.426 No_date   33:26   22.82  n/a     .000
R0010:C00188------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_FO      54118.36   89.426 No_date   33:26   22.82  n/a     .000
      fname :SN_FO.0010
      remark:Total Flows at Foster Drain
# Hydrograph from Node Foster routed to Node at Cedarview Road
# Channel X-Section obtained from RVCA Hydraulic Model - Station 6016
#
R0010:C00189------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_FO      54118.36   89.426 No_date   33:26   22.82  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:N_CE       54118.36   89.319 No_date   33:44   22.82  n/a     .000
      [L/S/n=  159./ .082/.035]
      {Vmax= 1.329:Dmax= 3.419}
#***************************************************************************
#    Catchment S-1
#    - To Jock River (north and south of Jock)
#    - Primarily agricultural fields; portion of sand quarry
#***************************************************************************
R0010:C00190------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:S-1-B         55.36    1.740 No_date   28:24   26.85 .415     .000
      [CN= 77.0: N= 3.00: Tp=  .45]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
#    -  JFSA 2021-02-24 change the name from S-1-BCDC to S-1-A and S-1-B. Change their TP values based on the new areas
#    -  JFSA 2021-02-24 "S-1-BCDC-1" and "S-1-BCDC-2" are not existing anymore. "S-1-BCDC-1" is part of "S-1-FO-D2" and
#    -  JFSA 2021-01-19, after adding Greenbank pond, "S-1-BCDC-3" is not existing anymore
R0010:C00191------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-D1        21.67    2.814 No_date   28:02   48.63 .752     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .75:LGI= 380.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0010:C00192------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:S-1-D1        21.67    2.814 No_date   28:02   48.63  n/a     .000
     Major System   /     1.0 02:S-1-D1J         .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:S-1-D1N       21.67    2.409 No_date   27:58   48.83  n/a     .000
      {MjSysSto=.1351E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00193------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:S-1-D1J         .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:S-1-D1N       21.67    2.409 No_date   27:58   48.83  n/a     .000
                 SUM=     1.0 01:S-1-D1S       21.67    2.409 No_date   27:58   48.83  n/a     .000
R0010:C00194------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:S-1-D1S       21.67    2.409 No_date   27:58   48.83  n/a     .000
                out <=    1.0 01:S-1-D1R       21.67     .191 No_date   29:23   48.83  n/a     .000
           overflow <=    1.0 03:S-1-D1Rovf      .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.6364E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00195------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-D4         3.28     .489 No_date   28:00   48.63 .752     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .75:LGI= 148.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0010:C00196------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:S-1-D4         3.28     .489 No_date   28:00   48.63  n/a     .000
     Major System   /     1.0 02:S-1-D4J         .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:S-1-D4N        3.28     .421 No_date   27:56   48.79  n/a     .000
      {MjSysSto=.1840E+02, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00197------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:S-1-D4J         .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:S-1-D4N        3.28     .421 No_date   27:56   48.79  n/a     .000
                 SUM=     1.0 01:S-1-D4S        3.28     .421 No_date   27:56   48.79  n/a     .000
R0010:C00198------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:S-1-D4S        3.28     .421 No_date   27:56   48.79  n/a     .000
                out <=    1.0 01:S-1-D4R        3.28     .029 No_date   29:14   48.79  n/a     .000
           overflow <=    1.0 03:S-1-D4Rovf      .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.9630E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00199------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-D5        12.84    1.749 No_date   28:01   48.63 .752     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .75:LGI= 293.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0010:C00200------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:S-1-D5        12.84    1.749 No_date   28:01   48.63  n/a     .000
     Major System   /     1.0 02:S-1-D5J         .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:S-1-D5N       12.84    1.500 No_date   28:09   48.75  n/a     .000
      {MjSysSto=.7643E+02, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00201------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:S-1-D5J         .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:S-1-D5N       12.84    1.500 No_date   27:57   48.75  n/a     .000
                 SUM=     1.0 01:S-1-D5S       12.84    1.500 No_date   27:57   48.75  n/a     .000
R0010:C00202------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:S-1-D5S       12.84    1.500 No_date   27:57   48.75  n/a     .000
                out <=    1.0 01:S-1-D5R       12.84     .113 No_date   29:20   48.75  n/a     .000
           overflow <=    1.0 03:S-1-D5Rovf      .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.3763E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00203------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-D6         1.75     .269 No_date   28:00   48.63 .752     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .75:LGI= 108.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0010:C00204------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:S-1-D6         1.75     .269 No_date   28:00   48.63  n/a     .000
     Major System   /     1.0 02:S-1-D6J         .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:S-1-D6N        1.75     .232 No_date   27:55   48.88  n/a     .000
      {MjSysSto=.9608E+01, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00205------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:S-1-D6J         .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:S-1-D6N        1.75     .232 No_date   27:55   48.88  n/a     .000
                 SUM=     1.0 01:S-1-D6S        1.75     .232 No_date   27:55   48.88  n/a     .000
R0010:C00206------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:S-1-D6S        1.75     .232 No_date   27:55   48.88  n/a     .000
                out <=    1.0 01:S-1-D6R        1.75     .015 No_date   29:12   48.88  n/a     .000
           overflow <=    1.0 03:S-1-D6Rovf      .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.5153E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00207------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-D7         2.03     .311 No_date   28:00   48.63 .752     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .75:LGI= 116.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0010:C00208------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:S-1-D7         2.03     .311 No_date   28:00   48.63  n/a     .000
     Major System   /     1.0 02:S-1-D7J         .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:S-1-D7N        2.03     .265 No_date   27:55   48.75  n/a     .000
      {MjSysSto=.1235E+02, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00209------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:S-1-D7J         .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:S-1-D7N        2.03     .265 No_date   27:55   48.75  n/a     .000
                 SUM=     1.0 01:S-1-D7S        2.03     .265 No_date   27:55   48.75  n/a     .000
R0010:C00210------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:S-1-D7S        2.03     .265 No_date   27:55   48.75  n/a     .000
                out <=    1.0 01:S-1-D7R        2.03     .018 No_date   29:12   48.75  n/a     .000
           overflow <=    1.0 03:S-1-D7Rovf      .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.5952E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
#    Catchment W_CLAR
#    - To West Clarke Drain (south of the Jock)
#    - Subdivision with 43% imp. as per Barrhaven South MSS
#    - 2020-11-30 update CLARKE Tributary Drainage Area to  = 121 ha based on P598(04)-11
#    - 2020-11-30 split CLARKE Drainage Area to MAJOR and ALL
#***************************************************************************
R0010:C00211------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:W_CLAR_MJ      1.77     .229 No_date   28:00   43.97 .680     .000
      [XIMP=.46:TIMP=.59]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 109.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
# 5-Year + 12% Capture
R0010:C00212------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:W_CLAR_MJ      1.77     .229 No_date   28:00   43.97  n/a     .000
                out <=    1.0 01:W_CLAR_MJn     1.77     .213 No_date   27:58   43.97  n/a     .000
           overflow <=    1.0 03:W_CLAR_MJj      .00     .013 No_date   28:00   43.97  n/a     .000
     {MxStoUsed=.8179E-04  m3, TotOvfVol=.1952E-03  m3, N-Ovf=    1, TotDurOvf=    0.hrs}
R0010:C00213------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:W_CLAR_ALL   119.40   12.497 No_date   28:05   47.94 .741     .000
      [XIMP=.60:TIMP=.65]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 892.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0010:C00214------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:W_CLAR_ALL   119.40   12.497 No_date   28:05   47.94  n/a     .000
                    +     1.0 02:W_CLAR_MJj      .00     .013 No_date   28:00   43.97  n/a     .000
                 SUM=     1.0 01:W_CLAR       119.40   12.497 No_date   28:05   47.94  n/a     .000
```

```
R0010:C00215------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:W_CLAR       119.40   12.497 No_date   28:05   47.94  n/a     .000
      fname :W_CLAR.0010
      remark:Total Flows to West Clarke
#***************************************************************************
#    West Clarke Pond 2
#    - Rating curve obtained from Barrhaven South MSS modeling
#    - Tributary Drainage Area to MSS Pond 2 = 241 ha
#***************************************************************************
R0010:C00216------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:W_CLAR       119.40   12.497 No_date   28:05   47.94  n/a     .000
                out <=    1.0 01:MS_P2        119.40    3.959 No_date   28:33   47.94  n/a     .000
           overflow <=    1.0 03:P2-OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.2802E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
#***************************************************************************
R0010:C00217------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N_CE       54118.36   89.319 No_date   33:44   22.82  n/a     .000
                    +     1.0 02:S-1-D4R        3.28     .029 No_date   29:14   48.79  n/a     .000
                    +     1.0 02:S-1-D5R       12.84     .113 No_date   29:20   48.75  n/a     .000
                    +     1.0 02:S-1-D4Rovf      .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:S-1-D5Rovf      .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:MS_P2        119.40    3.959 No_date   28:33   47.94  n/a     .000
                    +     1.0 02:P2-OVF          .00     .000 No_date    0:00     .00  n/a     .000
                 SUM=     1.0 01:SN_CE      54253.88   90.199 No_date   33:44   22.88  n/a     .000
R0010:C00218------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_CE      54253.88   90.199 No_date   33:44   22.88  n/a     .000
      fname :SN_CE.0010
      remark:Total Flows before Station 5737 on Jock River
# Channel X-Section obtained from RVCA Hydraulic Model - Station 5737
# 2021-02-25 add station 5737 before station 5002. Station 5737 was extracted from the HEC-RAS model T:\PROJ\1474-16\Des
# JFSA 2021-03-02  change the slope to 0.0175% instead of 0.02593 to stabilize the model
R0010:C00219------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_CE      54253.88   90.199 No_date   33:44   22.88  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:5737       54253.88   85.563 No_date   36:21   22.88  n/a     .000
      [L/S/n=  270./ .018/.035]
      {Vmax=  .730:Dmax= 4.478}
R0010:C00220------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:5737       54253.88   85.563 No_date   36:21   22.88  n/a     .000
                    +     1.0 02:S-1-D1R       21.67     .191 No_date   29:23   48.83  n/a     .000
                    +     1.0 02:S-1-D6R        1.75     .015 No_date   29:12   48.88  n/a     .000
                    +     1.0 02:S-1-D7R        2.03     .018 No_date   29:12   48.75  n/a     .000
                    +     1.0 02:S-1-D1Rovf      .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:S-1-D6Rovf      .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:S-1-D7Rovf      .00     .000 No_date    0:00     .00  n/a     .000
                 SUM=     1.0 01:5002       54279.34   85.716 No_date   36:21   22.89  n/a     .000
R0010:C00221------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:5002       54279.34   85.716 No_date   36:21   22.89  n/a     .000
      fname :5002.0010
      remark:Total Flows before Station 5002 on Jock River
# Hydrograph from Node Cedarview Road routed to Node at West Clarke Drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 5002
# JFSA 2021-02-19 Change the slope from 0.01 % (as per Stantec Report 2007) to 0.0255 % so the model will be more stable
# JFSA 2021-02-19 Change to three ROUTE CHANNEL with length 275 m each instead of one with 825 m length so the model wil
# JFSA 2021-02-26 change the length of 5002 route channel from 825 m to 736 m. That is because of adding station 5737 be
R0010:C00222------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:5002       54279.34   85.716 No_date   36:21   22.89  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:N_WCa      54279.34   85.732 No_date   36:17   22.89  n/a     .000
      [L/S/n=  245./ .095/.035]
      {Vmax= 1.133:Dmax= 2.527}
R0010:C00223------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:N_WCa      54279.34   85.732 No_date   36:17   22.89  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:N_WCb      54279.34   85.711 No_date   36:25   22.89  n/a     .000
      [L/S/n=  245./ .095/.035]
      {Vmax= 1.134:Dmax= 2.527}
R0010:C00224------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:N_WCb      54279.34   85.711 No_date   36:25   22.89  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:N_WC       54279.34   85.718 No_date   36:25   22.89  n/a     .000
      [L/S/n=  245./ .095/.035]
      {Vmax= 1.133:Dmax= 2.527}
#***************************************************************************
# Hydrograph from Node West Clarke routed to Node at Kennedy - Burnett Drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 4534
#
R0010:C00225------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:N_WC       54279.34   85.718 No_date   36:25   22.89  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N_KB       54279.34   85.356 No_date   36:41   22.89  n/a     .000
      [L/S/n= 1020./ .050/.035]
      {Vmax= 1.004:Dmax= 3.138}
#***************************************************************************
#    Catchment KEN_BU
#    - To Kennedy-Burnett SWM Facility
#    - Outlets to Fraser-Clarke drain (north of the Jock)
#    - Medium density residential subdivision
#***************************************************************************
#***************************************************************************
#   Existing Kennedy-Burnett SWM Facility
#    - Rating curve obtained from URTKBP
#    - Tributary Drainage Area to Pond = 160 ha
#***************************************************************************
R0010:C00226------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-01A        40.82    3.338 No_date   28:12   24.14 .373     .000
      [XIMP=.10:TIMP=.40]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI= .50:LGI= 522.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00227------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-01A        40.82    3.338 No_date   28:12   24.14  n/a     .000
     Major System   /     1.0 02:KB-01A-MJ       .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-01A-MN     40.82    3.338 No_date   28:12   24.14  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00228------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-01A-MJ       .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:KB-01A-MN     40.82    3.338 No_date   28:12   24.14  n/a     .000
                 SUM=     1.0 01:KB-01A-S      40.82    3.338 No_date   28:12   24.14  n/a     .000
R0010:C00229------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-01B        31.10    2.335 No_date   28:08   26.73 .413     .000
      [XIMP=.19:TIMP=.38]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .42:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI= .42:LGI= 455.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00230------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-01B        31.10    2.335 No_date   28:08   26.73  n/a     .000
     Major System   /     1.0 02:KB-01B-MJ       .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-01B-MN     31.10    1.585 No_date   27:59   26.78  n/a     .000
      {MjSysSto=.8272E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00231------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-01B-MJ       .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:KB-01B-MN     31.10    1.585 No_date   27:59   26.78  n/a     .000
                 SUM=     1.0 01:KB-01B-S      31.10    1.585 No_date   27:59   26.78  n/a     .000
R0010:C00232------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-01C        13.78    1.534 No_date   28:05   27.74 .429     .000
      [XIMP=.20:TIMP=.41]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI= .50:LGI= 303.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00233------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-01C        13.78    1.534 No_date   28:05   27.74  n/a     .000
     Major System   /     1.0 02:KB-01C-MJ       .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-01C-MN     13.78    1.350 No_date   28:00   27.93  n/a     .000
      {MjSysSto=.6901E+02, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00234------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-01C-MJ       .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:KB-01C-MN     13.78    1.350 No_date   28:00   27.93  n/a     .000
                 SUM=     1.0 01:KB-01C-S      13.78    1.350 No_date   28:00   27.93  n/a     .000
R0010:C00235------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-03         84.78    7.685 No_date   28:09   27.30 .422     .000
      [XIMP=.20:TIMP=.39]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI= .63:LGI= 752.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00236------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-03         84.78    7.685 No_date   28:09   27.30  n/a     .000
     Major System   /     1.0 02:KB-03-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-03-MN      84.78    5.270 No_date   27:59   27.40  n/a     .000
      {MjSysSto=.2022E+04, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00237------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-03-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:KB-03-MN      84.78    5.270 No_date   27:59   27.40  n/a     .000
                 SUM=     1.0 01:KB-03-S       84.78    5.270 No_date   27:59   27.40  n/a     .000
R0010:C00238------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-04          6.95    1.217 No_date   28:01   56.45 .873     .000
      [XIMP=.85:TIMP=.85]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .94:SLPI= .50:LGI= 215.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00239------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-04          6.95    1.217 No_date   28:01   56.45  n/a     .000
     Major System   /     1.0 02:KB-04-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-04-MN       6.95     .503 No_date   27:46   56.53  n/a     .000
      {MjSysSto=.5392E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00240------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-04-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:KB-04-MN       6.95     .503 No_date   27:46   56.53  n/a     .000
                 SUM=     1.0 01:KB-04-S        6.95     .503 No_date   27:46   56.53  n/a     .000
R0010:C00241------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-05          5.19     .983 No_date   28:00   59.76 .924     .000
      [XIMP=.93:TIMP=.93]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 186.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00242------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-06         12.93    2.536 No_date   28:00   57.57 .890     .000
      [XIMP=.87:TIMP=.87]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .94:SLPI=4.75:LGI= 294.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00243------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-06         12.93    2.536 No_date   28:00   57.57  n/a     .000
     Major System   /     1.0 02:KB-06-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-06-MN      12.93    2.262 No_date   27:56   57.80  n/a     .000
      {MjSysSto=.6369E+02, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00244------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-06-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:KB-06-MN      12.93    2.262 No_date   27:56   57.80  n/a     .000
                 SUM=     1.0 01:KB-06-S       12.93    2.262 No_date   27:56   57.80  n/a     .000
R0010:C00245------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-11          4.03     .686 No_date   28:00   48.04 .743     .000
      [XIMP=.68:TIMP=.68]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI=2.00:LGI= 164.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00246------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-11          4.03     .686 No_date   28:00   48.04  n/a     .000
     Major System   /     1.0 02:KB-11-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-11-MN       4.03     .577 No_date   27:55   48.44  n/a     .000
      {MjSysSto=.2954E+02, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00247------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-11-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:KB-11-MN       4.03     .577 No_date   27:55   48.44  n/a     .000
                 SUM=     1.0 01:KB-11-S        4.03     .577 No_date   27:55   48.44  n/a     .000
R0010:C00248------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S1             4.99    1.020 No_date   28:00   59.76 .924     .000
      [XIMP=.93:TIMP=.93]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=2.00:LGI= 182.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00249------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-15          2.15     .377 No_date   28:00   54.15 .837     .000
      [XIMP=.79:TIMP=.79]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .16:SLPI= .30:LGI= 120.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00250------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-01A-S      40.82    3.338 No_date   28:12   24.14  n/a     .000
                    +     1.0 02:KB-01B-S      31.10    1.585 No_date   27:59   26.78  n/a     .000
                    +     1.0 02:KB-01C-S      13.78    1.350 No_date   28:00   27.93  n/a     .000
                    +     1.0 02:KB-03-S       84.78    5.270 No_date   27:59   27.40  n/a     .000
                    +     1.0 02:KB-04-S        6.95     .503 No_date   27:46   56.53  n/a     .000
                    +     1.0 02:KB-05          5.19     .983 No_date   28:00   59.76  n/a     .000
                    +     1.0 02:KB-06-S       12.93    2.262 No_date   27:56   57.80  n/a     .000
                    +     1.0 02:KB-11-S        4.03     .577 No_date   27:55   48.44  n/a     .000
                    +     1.0 02:KB-15          2.15     .377 No_date   28:00   54.15  n/a     .000
                    +     1.0 02:S1             4.99    1.020 No_date   28:00   59.76  n/a     .000
                 SUM=     1.0 01:KB-P1        206.72   16.418 No_date   28:01   31.86  n/a     .000
R0010:C00251------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:KB-P1        206.72   16.418 No_date   28:01   31.86  n/a     .000
                out <=    1.0 01:KB-P1R       206.72   12.427 No_date   28:17   31.86  n/a     .000
           overflow <=    1.0 03:KB-P1ovf        .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.7282E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00252------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-P1R       206.72   12.427 No_date   28:17   31.86  n/a     .000
                    +     1.0 02:KB-P1ovf        .00     .000 No_date    0:00     .00  n/a     .000
                 SUM=     1.0 01:KB-Pond1     206.72   12.427 No_date   28:17   31.86  n/a     .000
R0010:C00253------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:KB-Pond1     206.72   12.427 No_date   28:17   31.86  n/a     .000
      fname :KB-Pond1.0010
      remark:Total Flows at KB first pond
R0010:C00254------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-07         10.86    2.042 No_date   28:00   57.07 .882     .000
      [XIMP=.86:TIMP=.86]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI=2.00:LGI= 269.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00255------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-07         10.86    2.042 No_date   28:00   57.07  n/a     .000
     Major System   /     1.0 02:KB-07-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-07-MN      10.86    2.042 No_date   28:00   57.07  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00256------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-07-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:KB-07-MN      10.86    2.042 No_date   28:00   57.07  n/a     .000
                 SUM=     1.0 01:KB-07-S       10.86    2.042 No_date   28:00   57.07  n/a     .000
R0010:C00257------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-08          6.61    1.072 No_date   28:00   46.33 .716     .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI=2.00:LGI= 210.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00258------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-08          6.61    1.072 No_date   28:00   46.33  n/a     .000
     Major System   /     1.0 02:KB-08-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-08-MN       6.61    1.058 No_date   28:00   46.37  n/a     .000
      {MjSysSto=.9091E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00259------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-08-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:KB-08-MN       6.61    1.058 No_date   28:00   46.37  n/a     .000
                 SUM=     1.0 01:KB-08-S        6.61    1.058 No_date   28:00   46.37  n/a     .000
R0010:C00260------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-09          2.60     .515 No_date   28:00   56.40 .872     .000
      [XIMP=.86:TIMP=.86]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=2.00:LGI= 132.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00261------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-10_1        2.37     .470 No_date   28:00   56.40 .872     .000
      [XIMP=.86:TIMP=.86]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=2.00:LGI= 126.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00262------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-10_2        1.14     .229 No_date   28:00   56.40 .872     .000
      [XIMP=.86:TIMP=.86]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=2.00:LGI=  87.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00263------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-12          4.86     .900 No_date   28:00   53.41 .826     .000
      [XIMP=.79:TIMP=.79]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.10:SLPI=2.00:LGI= 180.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00264------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-12          4.86     .900 No_date   28:00   53.41  n/a     .000
     Major System   /     1.0 02:KB-12-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-12-MN       4.86     .867 No_date   27:58   53.47  n/a     .000
      {MjSysSto=.3261E+01, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00265------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-12-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:KB-12-MN       4.86     .867 No_date   27:58   53.47  n/a     .000
                 SUM=     1.0 01:KB-12-S        4.86     .867 No_date   27:58   53.47  n/a     .000
R0010:C00266------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-13         10.19    1.611 No_date   28:00   46.33 .716     .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI=2.00:LGI= 261.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00267------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-13         10.19    1.611 No_date   28:00   46.33  n/a     .000
     Major System   /     1.0 02:KB-13-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-13-MN      10.19    1.611 No_date   28:00   46.33  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00268------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-13-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:KB-13-MN      10.19    1.611 No_date   28:00   46.33  n/a     .000
                 SUM=     1.0 01:KB-13-S       10.19    1.611 No_date   28:00   46.33  n/a     .000
R0010:C00269------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-14          5.47     .898 No_date   28:00   46.33 .716     .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI=2.00:LGI= 191.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00270------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-14          5.47     .898 No_date   28:00   46.33  n/a     .000
     Major System   /     1.0 02:KB-14-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-14-MN       5.47     .873 No_date   27:59   46.40  n/a     .000
      {MjSysSto=.1663E+01, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00271------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-14-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:KB-14-MN       5.47     .873 No_date   27:59   46.40  n/a     .000
                 SUM=     1.0 01:KB-14-S        5.47     .873 No_date   27:59   46.40  n/a     .000
R0010:C00272------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-16_2        3.42     .545 No_date   28:01   50.20 .776     .000
      [XIMP=.71:TIMP=.71]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .16:SLPI= .30:LGI= 151.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00273------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-Pond1     206.72   12.427 No_date   28:17   31.86  n/a     .000
                    +     1.0 02:KB-07-S       10.86    2.042 No_date   28:00   57.07  n/a     .000
                    +     1.0 02:KB-08-S        6.61    1.058 No_date   28:00   46.37  n/a     .000
                    +     1.0 02:KB-09          2.60     .515 No_date   28:00   56.40  n/a     .000
                    +     1.0 02:KB-10_1        2.37     .470 No_date   28:00   56.40  n/a     .000
                    +     1.0 02:KB-10_2        1.14     .229 No_date   28:00   56.40  n/a     .000
                    +     1.0 02:KB-12-S        4.86     .867 No_date   27:58   53.47  n/a     .000
                    +     1.0 02:KB-13-S       10.19    1.611 No_date   28:00   46.33  n/a     .000
                    +     1.0 02:KB-14-S        5.47     .873 No_date   27:59   46.40  n/a     .000
                    +     1.0 02:KB-16_2        3.42     .545 No_date   28:01   50.20  n/a     .000
                 SUM=     1.0 01:KB-P2        254.24   19.235 No_date   28:01   35.46  n/a     .000
R0010:C00274------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:KB-P2        254.24   19.235 No_date   28:01   35.46  n/a     .000
                out <=    1.0 01:KB-P2R       254.24   15.083 No_date   28:10   35.46  n/a     .000
           overflow <=    1.0 03:KB-P2ovf        .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.7575E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00275------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-P2R       254.24   15.083 No_date   28:10   35.46  n/a     .000
```

```
                     +     1.0 02:KB-P2ovf        .00     .000 No_date    0:00     .00  n/a     .000
                  SUM=     1.0 01:KB-Pond2     254.24   15.083 No_date   28:10   35.46  n/a     .000
R0010:C00276------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD               1.0 01:KB-Pond2     254.24   15.083 No_date   28:10   35.46  n/a     .000
      fname :KB-Pond2.0010
      remark:Total Flows at KB second pond
R0010:C00277------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-16_1        2.80     .465 No_date   28:01   52.17 .806     .000
      [XIMP=.75:TIMP=.75]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .16:SLPI= .30:LGI= 137.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00278------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:KB-Pond2     254.24   15.083 No_date   28:10   35.46  n/a     .000
                     +     1.0 02:KB-16_1        2.80     .465 No_date   28:01   52.17  n/a     .000
                  SUM=     1.0 01:KB-P3        257.04   15.295 No_date   28:08   35.64  n/a     .000
R0010:C00279------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->     1.0 02:KB-P3        257.04   15.295 No_date   28:08   35.64  n/a     .000
                 out <=    1.0 01:KB-P3R        12.26     .051 No_date   17:31   35.64  n/a     .000
            overflow <=    1.0 03:KB-P3ovf     244.78   15.243 No_date   28:09   35.64  n/a     .000
     {MxStoUsed=.1993E-02  m3, TotOvfVol=.8724E+01  m3, N-Ovf=    2, TotDurOvf=   23.hrs}
R0010:C00280------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:KB-P3R        12.26     .051 No_date   17:31   35.64  n/a     .000
                     +     1.0 02:KB-P3ovf     244.78   15.243 No_date   28:09   35.64  n/a     .000
                  SUM=     1.0 01:KB-Pond3     257.04   15.294 No_date   28:09   35.64  n/a     .000
R0010:C00281------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD               1.0 01:KB-Pond3     257.04   15.294 No_date   28:09   35.64  n/a     .000
      fname :KB-Pond3.0010
      remark:Total Flows at KB third pond
#*****************************************************************************
#    EXISTING / PROPOSED Subcatchments (Kennedy-Burnett SWM Facility (118080), SWM Modeling Approach, NOVATECH Report Ju
#    - TO FRASER-CLARKE DRAIN
#*****************************************************************************
R0010:C00282------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:FC-01          8.03    1.049 No_date   28:01   37.67 .582     .000
      [XIMP=.47:TIMP=.47]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 231.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00283------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:FC-01          8.03    1.049 No_date   28:01   37.67  n/a     .000
     Major System   /     1.0 02:FC-01-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:FC-01-MN       8.03     .756 No_date   28:17   37.91  n/a     .000
      {MjSysSto=.1270E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00284------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:FC-01-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                     +    1.0 02:FC-01-MN       8.03     .756 No_date   27:55   37.91  n/a     .000
                  SUM=    1.0 01:FC-01-S        8.03     .756 No_date   27:55   37.91  n/a     .000
R0010:C00285------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:FC-02         16.05    2.930 No_date   28:01   59.76 .924     .000
      [XIMP=.93:TIMP=.93]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 327.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00286------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:FC-02         16.05    2.930 No_date   28:01   59.76  n/a     .000
     Major System   /     1.0 02:FC-02-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:FC-02-MN      16.05    1.159 No_date   27:46   59.94  n/a     .000
      {MjSysSto=.1407E+04, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00287------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:FC-02-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                     +    1.0 02:FC-02-MN      16.05    1.159 No_date   27:46   59.94  n/a     .000
                  SUM=    1.0 01:FC-02-S       16.05    1.159 No_date   27:46   59.94  n/a     .000
R0010:C00288------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:FC-03          7.37    1.130 No_date   28:01   45.83 .708     .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 222.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00289------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:FC-03          7.37    1.130 No_date   28:01   45.83  n/a     .000
     Major System   /     1.0 02:FC-03-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:FC-03-MN       7.37     .358 No_date   27:45   45.93  n/a     .000
      {MjSysSto=.6763E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00290------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:FC-03-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                     +    1.0 02:FC-03-MN       7.37     .358 No_date   27:45   45.93  n/a     .000
                  SUM=    1.0 01:FC-03-S        7.37     .358 No_date   27:45   45.93  n/a     .000
R0010:C00291------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:FC-04         12.87    1.906 No_date   28:01   45.83 .708     .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 293.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00292------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:FC-04         12.87    1.906 No_date   28:01   45.83  n/a     .000
     Major System   /     1.0 02:FC-04-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:FC-04-MN      12.87     .741 No_date   27:46   45.93  n/a     .000
      {MjSysSto=.9380E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00293------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:FC-04-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                     +    1.0 02:FC-04-MN      12.87     .741 No_date   27:46   45.93  n/a     .000
                  SUM=    1.0 01:FC-04-S       12.87     .741 No_date   27:46   45.93  n/a     .000
#*****************************************************************************
#    PROPOSED Subcatchments (Kennedy-Burnett SWM Facility (118080), SWM Modeling Approach, NOVATECH Report June, 2020)
#    - TO JOCK RIVER
#*****************************************************************************
R0010:C00294------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:JR-01          8.24    1.257 No_date   28:01   45.83 .708     .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 234.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00295------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:JR-01          8.24    1.257 No_date   28:01   45.83  n/a     .000
     Major System   /     1.0 02:JR-01-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:JR-01-MN       8.24     .563 No_date   28:39   46.14  n/a     .000
      {MjSysSto=.4889E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00296------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:JR-01-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                     +    1.0 02:JR-01-MN       8.24     .563 No_date   27:47   46.14  n/a     .000
                  SUM=    1.0 01:JR-01-S        8.24     .563 No_date   27:47   46.14  n/a     .000
R0010:C00297------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:JR-02          1.59     .264 No_date   28:00   45.83 .708     .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 103.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0010:C00298------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:JR-02          1.59     .264 No_date   28:00   45.83  n/a     .000
     Major System   /     1.0 02:JR-02-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:JR-02-MN       1.59     .153 No_date   27:51   46.12  n/a     .000
      {MjSysSto=.5453E+02, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00299------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:JR-02-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                     +    1.0 02:JR-02-MN       1.59     .153 No_date   27:51   46.12  n/a     .000
                  SUM=    1.0 01:JR-02-S        1.59     .153 No_date   27:51   46.12  n/a     .000
#*****************************************************************************
#    Catchment FRASER
#    - To Fraser-Clarke drain (north of the Jock)
#    - Developed land with assumed 43% imp.
#    - 2020-12-17 Change Fraser area to be 35.1 as measured from QGIS
#    - 2020-12-17 All Fraser is undeveloped (Nashyd)
#*****************************************************************************
R0010:C00300------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:FRASER-DRN    13.65     .447 No_date   28:22   26.85 .415     .000
      [CN= 77.0: N= 3.00: Tp=  .43]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0010:C00301------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:FRASER-D      21.61    2.700 No_date   28:01   47.42 .733     .000
      [XIMP=.58:TIMP=.58]
      [LOSS= 2 :CN= 80.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 380.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 26.32: SMAX=175.50: SK= .010]
R0010:C00302------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:FRASER-D      21.61    2.700 No_date   28:01   47.42  n/a     .000
     Major System   /     1.0 02:FRASER-J        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:FRASER-N      21.61    2.281 No_date   27:57   47.46  n/a     .000
      {MjSysSto=.1390E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00303------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:FRASER-J        .00     .000 No_date    0:00     .00  n/a     .000
                     +    1.0 02:FRASER-N      21.61    2.281 No_date   27:57   47.46  n/a     .000
                  SUM=    1.0 01:FRASER-S      21.61    2.281 No_date   27:57   47.46  n/a     .000
R0010:C00304------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-Pond3     257.04   15.294 No_date   28:09   35.64  n/a     .000
                     +    1.0 02:S-1-B         55.36    1.740 No_date   28:24   26.85  n/a     .000
                     +    1.0 02:FRASER-DRN    13.65     .447 No_date   28:22   26.85  n/a     .000
                     +    1.0 02:FRASER-S      21.61    2.281 No_date   27:57   47.46  n/a     .000
                     +    1.0 02:N_KB       54279.34   85.356 No_date   36:41   22.89  n/a     .000
                     +    1.0 02:FC-01-S        8.03     .756 No_date   27:55   37.91  n/a     .000
                     +    1.0 02:FC-02-S       16.05    1.159 No_date   27:46   59.94  n/a     .000
                     +    1.0 02:FC-03-S        7.37     .358 No_date   27:45   45.93  n/a     .000
                  SUM=    1.0 01:4241       54658.45   85.806 No_date   36:39   22.98  n/a     .000
R0010:C00305------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:4241       54658.45   85.806 No_date   36:39   22.98  n/a     .000
      fname :4241.0010
      remark:Total Flows at Ken-Burnett Outlet
# Hydrograph from Node Ken-Burnett to station 3633
# Channel X-Section obtained from RVCA Hydraulic Model - Station 4241
#
R0010:C00306------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:4241       54658.45   85.806 No_date   36:39   22.98  n/a     .000
     [RDT= 1.00] out<-    1.0 01:4241-out   54658.45   85.856 No_date   36:23   22.98  n/a     .000
      [L/S/n=  294./ .109/.035]
      {Vmax= 1.172:Dmax= 2.015}
R0010:C00307------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:4241-out   54658.45   85.856 No_date   36:23   22.98  n/a     .000
                     +    1.0 02:FC-04-S       12.87     .741 No_date   27:46   45.93  n/a     .000
                     +    1.0 02:JR-01-S        8.24     .563 No_date   27:47   46.14  n/a     .000
                     +    1.0 02:JR-02-S        1.59     .153 No_date   27:51   46.12  n/a     .000
                  SUM=    1.0 01:SN_KB      54681.14   85.887 No_date   36:23   22.99  n/a     .000
R0010:C00308------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_KB      54681.14   85.887 No_date   36:23   22.99  n/a     .000
      fname :SN_KB.0010
      remark:Total Flows before Station 3633
# Hydrograph from Station 3633 to Node Todd
# Channel X-Section obtained from RVCA Hydraulic Model - Station 3633
# JFSA 2021-02-26 change the channel length (at station 3633) from 650m to 608m and change the slope from 0.0498% to 0.2
#
R0010:C00309------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_KB      54681.14   85.887 No_date   36:23   22.99  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N_TO       54681.14   85.808 No_date   36:44   22.99  n/a     .000
      [L/S/n=  608./ .247/.035]
      {Vmax= 1.553:Dmax= 1.518}
#*****************************************************************************
#    Catchment Greenbank
#    - To Greenbank Drain (south of the Jock)
#    - JFSA 2021-01-18 add Greenbank pond as per JFSA, P598(06)-15, June 2016
#    - JFSA 2021-01-19 update area from 37.479 ha to 36.6 ha based on GIS measurements
#*****************************************************************************
R0010:C00310------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:Greenbank     36.60    4.662 No_date   28:02   49.38 .763     .000
      [XIMP=.64:TIMP=.68]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 494.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0010:C00311------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:Greenbank     36.60    4.662 No_date   28:02   49.38  n/a     .000
                 out <=   1.0 01:GreenB_MN     36.60    1.697 No_date   28:18   49.38  n/a     .000
            overflow <=   1.0 03:GreenB_MJ       .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.8299E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00312------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N_TO       54681.14   85.808 No_date   36:44   22.99  n/a     .000
                     +    1.0 02:GreenB_MJ       .00     .000 No_date    0:00     .00  n/a     .000
                     +    1.0 02:GreenB_MN     36.60    1.697 No_date   28:18   49.38  n/a     .000
                  SUM=    1.0 01:GreenB     54717.74   85.928 No_date   36:44   23.01  n/a     .000
R0010:C00313------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:GreenB     54717.74   85.928 No_date   36:44   23.01  n/a     .000
      fname :GreenB.0010
      remark:Total Flows at Greenbank Drain
#*****************************************************************************
#    Catchment TODD
#    - To Todd Drain (south of the Jock)
#    - Subdivision with 43% imp. as per Barrhaven South MSS
#    - 2020-11-30 increase imp. based on P598(04)-11
#    - 2020-11-30 update TODD Tributary Drainage Area to  = 146.015 ha based on P598(04)-11
#    - 2020-11-30 split TODD Drainage Area to MAJOR, MINOR, POND and ALL
#*****************************************************************************
#    - JFSA 2021-01-19 add "TODD_MN1" as part of Clarke("W_CLAR_MJ") and remove it from Todd
R0010:C00314------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:TODD_MN2       2.10     .282 No_date   28:00   44.92 .694     .000
      [XIMP=.53:TIMP=.57]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 118.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0010:C00315------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:TODD_MN3        .12     .016 No_date   28:00   44.90 .694     .000
      [XIMP=.53:TIMP=.57]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI=  28.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0010:C00316------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:TODD_MJ       30.23    3.512 No_date   28:02   46.20 .714     .000
      [XIMP=.52:TIMP=.64]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 449.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0010:C00317------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:TODD_ALL     112.91   10.943 No_date   28:05   44.71 .691     .000
      [XIMP=.52:TIMP=.57]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 868.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0010:C00318------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:TODD_P         3.06     .451 No_date   28:00   48.23 .745     .000
      [XIMP=.63:TIMP=.63]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 143.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
# 5-Year + 12% Capture
R0010:C00319------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:TODD_MJ       30.23    3.512 No_date   28:02   46.20  n/a     .000
                 out <=   1.0 01:TODD_MJn      30.14    3.314 No_date   28:00   46.20  n/a     .000
            overflow <=   1.0 03:TODD_MJj        .09     .190 No_date   28:03   46.20  n/a     .000
     {MxStoUsed=.4110E-03  m3, TotOvfVol=.4062E-02  m3, N-Ovf=    1, TotDurOvf=    0.hrs}
# 5-Year + 12% Capture
R0010:C00320------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:TODD_MN2       2.10     .282 No_date   28:00   44.92  n/a     .000
                 out <=   1.0 01:TODD_MN2n      2.10     .268 No_date   27:58   44.92  n/a     .000
            overflow <=   1.0 03:TODD_MN2j       .00     .011 No_date   28:00   44.92  n/a     .000
     {MxStoUsed=.1267E-03  m3, TotOvfVol=.1440E-03  m3, N-Ovf=    1, TotDurOvf=    0.hrs}
R0010:C00321------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:TODD_MN3        .12     .016 No_date   28:00   44.90  n/a     .000
                 out <=   1.0 01:TODD_MN3n       .12     .016 No_date   28:00   44.90  n/a     .000
            overflow <=   1.0 03:TODD_MN3j       .00     .000 No_date   28:00   44.90  n/a     .000
     {MxStoUsed=.1007E-03  m3, TotOvfVol=.1379E-05  m3, N-Ovf=    1, TotDurOvf=    0.hrs}
R0010:C00322------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A2            25.50    2.388 No_date   28:03   40.97 .633     .000
      [XIMP=.42:TIMP=.52]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 566.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0010:C00323------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A2            25.50    2.388 No_date   28:03   40.97  n/a     .000
     Major System   /     1.0 02:A2-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A2-MN         25.50    1.818 No_date   27:57   40.97  n/a     .000
      {MjSysSto=.2896E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00324------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:TODD_MN2n      2.10     .268 No_date   27:58   44.92  n/a     .000
                     +    1.0 02:TODD_MN3n       .12     .016 No_date   28:00   44.90  n/a     .000
                     +    1.0 02:TODD_MJj        .09     .190 No_date   28:03   46.20  n/a     .000
                     +    1.0 02:TODD_P         3.06     .451 No_date   28:00   48.23  n/a     .000
                     +    1.0 02:TODD_ALL     112.91   10.943 No_date   28:05   44.71  n/a     .000
                     +    1.0 02:W_CLAR_MJn     1.77     .213 No_date   27:58   43.97  n/a     .000
                  SUM=    1.0 01:TODD         120.03   11.699 No_date   28:03   44.79  n/a     .000
R0010:C00325------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:TODD         120.03   11.699 No_date   28:03   44.79  n/a     .000
      fname :TODD.0010
      remark:Total Flows at Todd Drain
#*****************************************************************************
#    Todd Pond 3
#    - Rating curve obtained from Barrhaven South MSS modeling
#    - stantec 2007, Tributary Drainage Area to MSS Pond 3 = 193 ha
#*****************************************************************************
R0010:C00326------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:TODD         120.03   11.699 No_date   28:03   44.79  n/a     .000
                 out <=   1.0 01:MS_P3        120.03    6.151 No_date   28:20   44.79  n/a     .000
            overflow <=   1.0 03:P3-OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.2461E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00327------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:GreenB     54717.74   85.928 No_date   36:44   23.01  n/a     .000
                     +    1.0 02:MS_P3        120.03    6.151 No_date   28:20   44.79  n/a     .000
                     +    1.0 02:P3-OVF          .00     .000 No_date    0:00     .00  n/a     .000
                     +    1.0 02:TODD_MN2j       .00     .011 No_date   28:00   44.92  n/a     .000
                     +    1.0 02:A2-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                  SUM=    1.0 01:SN_TO      54837.78   86.177 No_date   36:43   23.06  n/a     .000
R0010:C00328------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_TO      54837.78   86.177 No_date   36:43   23.06  n/a     .000
      fname :SN_TO.0010
      remark:Total Flows at Todd Drain
#
# Hydrograph from Todd Drain routed to Corrigan Drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 2462
# 2021-02-19 Change the slope from 0.033 % (as per Stantec Report 2007) to 0.05 % so the model will be more stable and g
R0010:C00329------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_TO      54837.78   86.177 No_date   36:43   23.06  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:N_TO       54837.78   85.488 No_date   37:22   23.06  n/a     .000
      [L/S/n=  280./ .050/.045]
      {Vmax=  .883:Dmax= 2.859}
R0010:C00330------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:N_TO       54837.78   85.488 No_date   37:22   23.06  n/a     .000
      fname :N_TO.0010
      remark:Total inflows at Station 2462
#*****************************************************************************
#    Catchment CORRIG
#    - To Corrigan Drain (south of the Jock)
#    - Primarily Developed (medium density)
#    - JFSA JAN 2021, add Corrigan subcatchments as per IBI, July 2008
#*****************************************************************************
R0010:C00331------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:corr1         15.87    2.113 No_date   28:01   48.23 .746     .000
      [XIMP=.63:TIMP=.63]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 325.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0010:C00332------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:corr1         15.87    2.113 No_date   28:01   48.23  n/a     .000
     Major System   /     1.0 02:corr1-MJ        .00     .000 No_date    0:00     .00  n/a     .000
```

```
      Minor System   \     1.0 03:corr1-MN      15.87    1.818 No_date   28:09   48.38  n/a     .000
       {MjSysSto=.8936E+02, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
 R0010:C00333------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS NASHYD     1.0 01:corr2         12.47     .209 No_date   29:11   26.85 .415     .000
       [CN= 77.0: N= 3.00: Tp= 1.10]
       [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
       [InterEventTime=  12.00]
 R0010:C00334------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:A1-Corrig     15.75    1.640 No_date   28:02   40.97 .633     .000
       [XIMP=.42:TIMP=.52]
       [LOSS= 2 :CN= 75.0]
       [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 324.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 33.81: SMAX=225.43: SK= .010]
 R0010:C00335------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     COMPUTE DUALHYD       1.0 01:A1-Corrig     15.75    1.640 No_date   28:02   40.97  n/a     .000
      Major System   /     1.0 02:A1-MJ           .00     .000 No_date    0:00     .00  n/a     .000
      Minor System   \     1.0 03:A1-MN         15.75    1.640 No_date   28:02   40.97  n/a     .000
       {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
 R0010:C00336------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS NASHYD     1.0 01:B1             2.77     .072 No_date   28:09   16.64 .257     .000
       [CN= 56.0: N= 3.00: Tp=  .23]
       [IaREC= 4.00: SMIN= 79.69: SMAX=531.24: SK= .010]
       [InterEventTime=  12.00]
 R0010:C00337------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:A4             1.27     .178 No_date   28:00   48.63 .752     .000
       [XIMP=.65:TIMP=.65]
       [LOSS= 2 :CN= 75.0]
       [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 253.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 33.81: SMAX=225.43: SK= .010]
 R0010:C00338------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     COMPUTE DUALHYD       1.0 01:A4             1.27     .178 No_date   28:00   48.63  n/a     .000
      Major System   /     1.0 02:A4-MJ           .00     .000 No_date    0:00     .00  n/a     .000
      Minor System   \     1.0 03:A4-MN          1.27     .178 No_date   28:00   48.63  n/a     .000
       {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
 R0010:C00339------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:A1-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                     +     1.0 02:A1-MN         15.75    1.640 No_date   28:02   40.97  n/a     .000
                     +     1.0 02:corr1-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                     +     1.0 02:corr1-MN      15.87    1.818 No_date   28:09   48.38  n/a     .000
                     +     1.0 02:corr2         12.47     .209 No_date   29:11   26.85  n/a     .000
                     +     1.0 02:B1             2.77     .072 No_date   28:09   16.64  n/a     .000
                     +     1.0 02:A4-MN          1.27     .178 No_date   28:00   48.63  n/a     .000
                  SUM=     1.0 01:MH101         48.13    3.734 No_date   28:02   38.56  n/a     .000
 R0010:C00340------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     SAVE HYD              1.0 01:MH101         48.13    3.734 No_date   28:02   38.56  n/a     .000
       fname :MH101.0010
       remark:Total Flows at MH101
 R0010:C00341------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE PIPE      ->    1.0 02:MH101         48.13    3.734 No_date   28:02   38.56  n/a     .000
  *   [RDT= 1.00] out<-    1.0 01:101-102       48.13    3.662 No_date   28:03   38.56  n/a     .000
       [L/S/n=  368./ .540/.013]
       {Vmax= 3.084:Dmax= 1.088}
       [Din= 1.05:Dused= 1.33}
 R0010:C00342------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:A2-MN         25.50    1.818 No_date   27:57   40.97  n/a     .000
                     +     1.0 02:101-102       48.13    3.662 No_date   28:03   38.56  n/a     .000
                  SUM=     1.0 01:MH102         73.63    5.480 No_date   28:03   39.39  n/a     .000
 R0010:C00343------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     SAVE HYD              1.0 01:MH102         73.63    5.480 No_date   28:03   39.39  n/a     .000
       fname :MH102.0010
       remark:Total Flows at MH102
 R0010:C00344------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:A5             1.60     .236 No_date   28:01   51.11 .790     .000
       [XIMP=.71:TIMP=.71]
       [LOSS= 2 :CN= 75.0]
       [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 300.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 33.81: SMAX=225.43: SK= .010]
 R0010:C00345------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:A4-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                     +     1.0 02:A5             1.60     .236 No_date   28:01   51.11  n/a     .000
                  SUM=     1.0 01:A5T            1.60     .236 No_date   28:01   51.11  n/a     .000
 R0010:C00346------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     COMPUTE DUALHYD       1.0 01:A5T            1.60     .236 No_date   28:01   51.11  n/a     .000
      Major System   /     1.0 02:A5-MJ           .00     .000 No_date    0:00     .00  n/a     .000
      Minor System   \     1.0 03:A5-MN          1.60     .236 No_date   28:01   51.11  n/a     .000
       {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
 R0010:C00347------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE PIPE      ->    1.0 02:MH102         73.63    5.480 No_date   28:03   39.39  n/a     .000
  *   [RDT= 1.00] out<-    1.0 01:102-103       73.63    5.291 No_date   28:06   39.39  n/a     .000
       [L/S/n=  504./ .280/.013]
       {Vmax= 2.654:Dmax= 1.421}
       [Din= 1.50:Dused= 1.73}
 R0010:C00348------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:102-103       73.63    5.291 No_date   28:06   39.39  n/a     .000
                     +     1.0 02:A5-MN          1.60     .236 No_date   28:01   51.11  n/a     .000
                  SUM=     1.0 01:MH103         75.23    5.462 No_date   28:05   39.64  n/a     .000
 R0010:C00349------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     SAVE HYD              1.0 01:MH103         75.23    5.462 No_date   28:05   39.64  n/a     .000
       fname :MH103.0010
       remark:Total Flows at MH103
 R0010:C00350------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE PIPE      ->    1.0 02:MH103         75.23    5.462 No_date   28:05   39.64  n/a     .000
      [RDT= 1.00] out<-    1.0 01:103-104       75.23    5.382 No_date   28:07   39.64  n/a     .000
       [L/S/n=  438./ .460/.013]
       {Vmax= 3.265:Dmax= 1.205}
       [Din= 1.65:Dused= 1.65}
 R0010:C00351------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:A6             1.56     .232 No_date   28:00   51.11 .790     .000
       [XIMP=.71:TIMP=.71]
       [LOSS= 2 :CN= 75.0]
       [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 280.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 33.81: SMAX=225.43: SK= .010]
 R0010:C00352------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:A5-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                     +     1.0 02:A6             1.56     .232 No_date   28:00   51.11  n/a     .000
                  SUM=     1.0 01:A6T            1.56     .232 No_date   28:00   51.11  n/a     .000
 R0010:C00353------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     COMPUTE DUALHYD       1.0 01:A6T            1.56     .232 No_date   28:00   51.11  n/a     .000
      Major System   /     1.0 02:A6-MJ           .00     .000 No_date    0:00     .00  n/a     .000
      Minor System   \     1.0 03:A6-MN          1.56     .232 No_date   28:00   51.11  n/a     .000
       {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
 R0010:C00354------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:A6-MN          1.56     .232 No_date   28:00   51.11  n/a     .000
                     +     1.0 02:103-104       75.23    5.382 No_date   28:07   39.64  n/a     .000
                     +     1.0 02:TODD_MJn      30.14    3.314 No_date   28:00   46.20  n/a     .000
                  SUM=     1.0 01:MH104        106.93    8.816 No_date   28:05   41.66  n/a     .000
 R0010:C00355------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     SAVE HYD              1.0 01:MH104        106.93    8.816 No_date   28:05   41.66  n/a     .000
       fname :MH104.0010
       remark:Total Flows at MH104
 R0010:C00356------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:B2            12.31    1.229 No_date   28:02   41.19 .637     .000
       [XIMP=.41:TIMP=.54]
       [LOSS= 2 :CN= 75.0]
       [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 417.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 33.81: SMAX=225.43: SK= .010]
 R0010:C00357------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     COMPUTE DUALHYD       1.0 01:B2            12.31    1.229 No_date   28:02   41.19  n/a     .000
      Major System   /     1.0 02:B2-MJ           .00     .000 No_date    0:00     .00  n/a     .000
      Minor System   \     1.0 03:B2-MN         12.31    1.029 No_date   27:58   41.28  n/a     .000
       {MjSysSto=.7604E+02, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
 R0010:C00358------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE PIPE      ->    1.0 02:B2-MN         12.31    1.029 No_date   27:58   41.28  n/a     .000
      [RDT= 1.00] out<-    1.0 01:315-333       12.31    1.019 No_date   28:12   41.28  n/a     .000
       [L/S/n=  254./ .100/.013]
       {Vmax= 1.220:Dmax=  .838}
       [Din= 1.20:Dused= 1.20}
 R0010:C00359------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:B3             5.59     .579 No_date   28:02   41.19 .637     .000
       [XIMP=.41:TIMP=.54]
       [LOSS= 2 :CN= 75.0]
       [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 345.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 33.81: SMAX=225.43: SK= .010]
 R0010:C00360------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     COMPUTE DUALHYD       1.0 01:B3             5.59     .579 No_date   28:02   41.19  n/a     .000
      Major System   /     1.0 02:B3-MJ           .00     .000 No_date    0:00     .00  n/a     .000
      Minor System   \     1.0 03:B3-MN          5.59     .459 No_date   27:57   41.35  n/a     .000
       {MjSysSto=.4795E+02, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
 R0010:C00361------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:B3-MN          5.59     .459 No_date   27:57   41.35  n/a     .000
                     +     1.0 02:315-333       12.31    1.019 No_date   28:12   41.28  n/a     .000
                  SUM=     1.0 01:MH333         17.90    1.478 No_date   28:12   41.30  n/a     .000
 R0010:C00362------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     SAVE HYD              1.0 01:MH333         17.90    1.478 No_date   28:12   41.30  n/a     .000
       fname :MH333.0010
       remark:Total Flows at MH333
 R0010:C00363------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE PIPE      ->    1.0 02:MH333         17.90    1.478 No_date   28:12   41.30  n/a     .000
  *   [RDT= 1.00] out<-    1.0 01:333-335       17.90    1.450 No_date   28:14   41.30  n/a     .000
       [L/S/n=  251./ .100/.013]
       {Vmax= 1.300:Dmax= 1.054}
       [Din= 1.20:Dused= 1.28}
 R0010:C00364------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE PIPE      ->    1.0 02:333-335       17.90    1.450 No_date   28:14   41.30  n/a     .000
  *   [RDT= 1.00] out<-    1.0 01:335-338       17.90    1.447 No_date   28:14   41.30  n/a     .000
       [L/S/n=  185./ .100/.013]
       {Vmax= 1.294:Dmax= 1.047}
       [Din= 1.20:Dused= 1.28}
 R0010:C00365------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE PIPE      ->    1.0 02:335-338       17.90    1.447 No_date   28:14   41.30  n/a     .000
  *   [RDT= 1.00] out<-    1.0 01:338-340       17.90    1.418 No_date   28:15   41.30  n/a     .000
       [L/S/n=  233./ .100/.013]
       {Vmax= 1.325:Dmax=  .963}
       [Din= 1.35:Dused= 1.35}
 R0010:C00366------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:B4             7.60     .768 No_date   28:02   41.19 .637     .000
       [XIMP=.41:TIMP=.54]
       [LOSS= 2 :CN= 75.0]
       [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 388.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 33.81: SMAX=225.43: SK= .010]
 R0010:C00367------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     COMPUTE DUALHYD       1.0 01:B4             7.60     .768 No_date   28:02   41.19  n/a     .000
      Major System   /     1.0 02:B4-MJ           .00     .000 No_date    0:00     .00  n/a     .000
      Minor System   \     1.0 03:B4-MN          7.60     .655 No_date   27:58   41.31  n/a     .000
       {MjSysSto=.3770E+02, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
 R0010:C00368------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:338-340       17.90    1.418 No_date   28:15   41.30  n/a     .000
                     +     1.0 02:B4-MN          7.60     .655 No_date   27:58   41.31  n/a     .000
                  SUM=     1.0 01:MH340         25.50    2.022 No_date   28:12   41.30  n/a     .000
 R0010:C00369------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     SAVE HYD              1.0 01:MH340         25.50    2.022 No_date   28:12   41.30  n/a     .000
       fname :MH340.0010
       remark:Total Flows at MH340
 R0010:C00370------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE PIPE      ->    1.0 02:MH340         25.50    2.022 No_date   28:12   41.30  n/a     .000
      [RDT= 1.00] out<-    1.0 01:340-104       25.50    1.986 No_date   28:12   41.30  n/a     .000
       [L/S/n=  240./ .150/.013]
       {Vmax= 1.706:Dmax=  .895}
       [Din= 1.65:Dused= 1.65}
 R0010:C00371------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:340-104       25.50    1.986 No_date   28:12   41.30  n/a     .000
                     +     1.0 02:MH104        106.93    8.816 No_date   28:05   41.66  n/a     .000
                  SUM=     1.0 01:MH104T       132.43   10.636 No_date   28:05   41.59  n/a     .000
 R0010:C00372------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE PIPE      ->    1.0 02:MH104T       132.43   10.636 No_date   28:05   41.59  n/a     .000
  *   [RDT= 1.00] out<-    1.0 01:104-105      132.43   10.007 No_date   28:06   41.59  n/a     .000
       [L/S/n=  380./ .100/.013]
       {Vmax= 2.071:Dmax= 1.952}
       {HGTH= 2.30:WDTH= 2.63}
 R0010:C00373------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:B5             2.20     .291 No_date   28:00   45.32 .701     .000
       [XIMP=.57:TIMP=.57]
       [LOSS= 2 :CN= 75.0]
       [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 187.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 33.81: SMAX=225.43: SK= .010]
 R0010:C00374------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     COMPUTE DUALHYD       1.0 01:B5             2.20     .291 No_date   28:00   45.32  n/a     .000
      Major System   /     1.0 02:B5-MJ           .00     .000 No_date    0:00     .00  n/a     .000
      Minor System   \     1.0 03:B5-MN          2.20     .260 No_date   27:57   45.39  n/a     .000
       {MjSysSto=.6886E+01, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
 R0010:C00375------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:A8              .96     .151 No_date   28:00   51.11 .790     .000
       [XIMP=.71:TIMP=.71]
       [LOSS= 2 :CN= 75.0]
       [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 186.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 33.81: SMAX=225.43: SK= .010]
 R0010:C00376------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:A6-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                     +     1.0 02:A8              .96     .151 No_date   28:00   51.11  n/a     .000
                  SUM=     1.0 01:A8T             .96     .151 No_date   28:00   51.11  n/a     .000
 R0010:C00377------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     COMPUTE DUALHYD       1.0 01:A8T             .96     .151 No_date   28:00   51.11  n/a     .000
      Major System   /     1.0 02:A8-MJ           .00     .000 No_date    0:00     .00  n/a     .000
      Minor System   \     1.0 03:A8-MN           .96     .151 No_date   28:00   51.11  n/a     .000
       {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
 R0010:C00378------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:104-105      132.43   10.007 No_date   28:06   41.59  n/a     .000
                     +     1.0 02:B5-MN          2.20     .260 No_date   27:57   45.39  n/a     .000
                     +     1.0 02:A8-MN           .96     .151 No_date   28:00   51.11  n/a     .000
                     +     1.0 02:TODD_MN3j       .00     .000 No_date   28:00   44.90  n/a     .000
                  SUM=     1.0 01:MH105        135.59   10.343 No_date   28:05   41.72  n/a     .000
 R0010:C00379------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     SAVE HYD              1.0 01:MH105        135.59   10.343 No_date   28:05   41.72  n/a     .000
       fname :MH105.0010
       remark:Total Flows at MH105
 R0010:C00380------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
  *  DIVERT HYD      ->    1.0 01:A8-MJ           .00     .000 No_date    0:00     .00  n/a     .000
            diverted <=    1.0 02:A8-MJ-JR        .00     .000 No_date    0:00     .00  n/a     .000
            diverted <=    1.0 03:A8-MJ-B6        .00     .000 No_date    0:00     .00  n/a     .000
 R0010:C00381------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     DIVERT HYD      ->    1.0 01:MH105        135.59   10.343 No_date   28:05   41.72  n/a     .000
            diverted <=    1.0 02:MH105-JR      28.70    7.335 No_date   28:05   41.72  n/a     .000
            diverted <=    1.0 03:MH105-B6     106.90    3.008 No_date   28:05   41.72  n/a     .000
 R0010:C00382------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:B7             7.19     .792 No_date   28:01   41.19 .637     .000
       [XIMP=.41:TIMP=.54]
       [LOSS= 2 :CN= 75.0]
       [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 211.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 33.81: SMAX=225.43: SK= .010]
 R0010:C00383------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:B4-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                     +     1.0 02:B7             7.19     .792 No_date   28:01   41.19  n/a     .000
                  SUM=     1.0 01:B7-B4MJ        7.19     .792 No_date   28:01   41.19  n/a     .000
 R0010:C00384------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     COMPUTE DUALHYD       1.0 01:B7-B4MJ        7.19     .792 No_date   28:01   41.19  n/a     .000
      Major System   /     1.0 02:B7R-MJ          .00     .000 No_date    0:00     .00  n/a     .000
      Minor System   \     1.0 03:B7R-MN         7.19     .629 No_date   27:55   41.31  n/a     .000
       {MjSysSto=.5641E+02, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
 R0010:C00385------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE PIPE      ->    1.0 02:B7R-MN         7.19     .629 No_date   27:55   41.31  n/a     .000
  *   [RDT= 1.00] out<-    1.0 01:360-106A       7.19     .628 No_date   28:11   41.31  n/a     .000
       [L/S/n=  167./ .100/.013]
       {Vmax= 1.089:Dmax=  .665}
       [Din= 1.05:Dused= 1.05}
 R0010:C00386------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:B6             3.29     .376 No_date   28:00   41.19 .637     .000
       [XIMP=.41:TIMP=.54]
       [LOSS= 2 :CN= 75.0]
       [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 148.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 33.81: SMAX=225.43: SK= .010]
 R0010:C00387------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     COMPUTE DUALHYD       1.0 01:B6             3.29     .376 No_date   28:00   41.19  n/a     .000
      Major System   /     1.0 02:B6-MJ           .00     .000 No_date    0:00     .00  n/a     .000
      Minor System   \     1.0 03:B6-MN          3.29     .064 No_date   27:36   41.22  n/a     .000
       {MjSysSto=.3813E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
 R0010:C00388------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:EX-LAND       32.50    3.367 No_date   28:02   41.86 .647     .000
       [XIMP=.50:TIMP=.50]
       [LOSS= 2 :CN= 74.0]
       [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 465.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 36.67: SMAX=244.49: SK= .010]
 R0010:C00389------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     COMPUTE DUALHYD       1.0 01:EX-LAND       32.50    3.367 No_date   28:02   41.86  n/a     .000
      Major System   /     1.0 02:EX-LAND-MJ      .00     .000 No_date    0:00     .00  n/a     .000
      Minor System   \     1.0 03:EX-LAND-MN    32.50    2.275 No_date   27:55   41.99  n/a     .000
       {MjSysSto=.5949E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
 R0010:C00390------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:B7R-MJ          .00     .000 No_date    0:00     .00  n/a     .000
                     +     1.0 02:EX-LAND-MJ      .00     .000 No_date    0:00     .00  n/a     .000
                     +     1.0 02:B5-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                     +     1.0 02:B6-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                     +     1.0 02:B6-MN          3.29     .064 No_date   27:36   41.22  n/a     .000
                     +     1.0 02:A8-MJ-B6        .00     .000 No_date    0:00     .00  n/a     .000
                  SUM=     1.0 01:B6-B7ExMJ      3.29     .064 No_date   27:36   41.22  n/a     .000
 R0010:C00391------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     COMPUTE DUALHYD       1.0 01:B6-B7ExMJ      3.29     .064 No_date   27:36   41.22  n/a     .000
      Major System   /     1.0 02:B6R-MJ          .00     .000 No_date    0:00     .00  n/a     .000
      Minor System   \     1.0 03:B6R-MN         3.29     .064 No_date   27:36   41.22  n/a     .000
       {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
 R0010:C00392------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE PIPE      ->    1.0 02:MH105-B6     106.90    3.008 No_date   28:05   41.72  n/a     .000
      [RDT= 1.00] out<-    1.0 01:105-106A     106.90    3.006 No_date   28:12   41.72  n/a     .000
       [L/S/n=  208./ .100/.013]
       {Vmax= 1.597:Dmax= 1.249}
       [Din= 1.80:Dused= 1.80}
 R0010:C00393------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:360-106A       7.19     .628 No_date   28:11   41.31  n/a     .000
                     +     1.0 02:105-106A     106.90    3.006 No_date   28:12   41.72  n/a     .000
                     +     1.0 02:B6R-MN         3.29     .064 No_date   27:36   41.22  n/a     .000
                     +     1.0 02:B6R-MJ          .00     .000 No_date    0:00     .00  n/a     .000
                  SUM=     1.0 01:MH106A       117.38    3.698 No_date   28:11   41.68  n/a     .000
 R0010:C00394------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     SAVE HYD              1.0 01:MH106A       117.38    3.698 No_date   28:11   41.68  n/a     .000
       fname :MH106A.0010
       remark:Total Flows at MH106A
 R0010:C00395------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE PIPE      ->    1.0 02:MH106A       117.38    3.698 No_date   28:11   41.68  n/a     .000
  *   [RDT= 1.00] out<-    1.0 01:106A-106     117.38    3.659 No_date   28:06   41.68  n/a     .000
       [L/S/n=  190./ .100/.013]
       {Vmax= 1.635:Dmax= 1.487}
       [Din= 1.80:Dused= 1.81}
 R0010:C00396------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:A9             2.44     .365 No_date   28:00   51.11 .790     .000
       [XIMP=.71:TIMP=.71]
       [LOSS= 2 :CN= 75.0]
       [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 262.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 33.81: SMAX=225.43: SK= .010]
 R0010:C00397------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     COMPUTE DUALHYD       1.0 01:A9             2.44     .365 No_date   28:00   51.11  n/a     .000
      Major System   /     1.0 02:A9-MJ           .00     .000 No_date    0:00     .00  n/a     .000
      Minor System   \     1.0 03:A9-MN          2.44     .365 No_date   28:00   51.11  n/a     .000
 R0010:C00398------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:106A-106     117.38    3.659 No_date   28:06   41.68  n/a     .000
                     +     1.0 02:A9-MN          2.44     .365 No_date   28:00   51.11  n/a     .000
                  SUM=     1.0 01:MH106        119.82    3.992 No_date   28:02   41.87  n/a     .000
 R0010:C00399------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     SAVE HYD              1.0 01:MH106        119.82    3.992 No_date   28:02   41.87  n/a     .000
       fname :MH106.0010
```

```
       remark:Total Flows at MH106
R0010:C00400------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH106         119.82    3.992 No_date   28:02   41.87  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:106-107       119.82    3.962 No_date   28:03   41.87  n/a     .000
       [L/S/n=  123./ .100/.013]
       {Vmax= 1.666:Dmax= 1.530}
       [Din= 1.80:Dused= 1.86}
R0010:C00401------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A10             4.14     .416 No_date   28:01   38.46 .595     .000
       [XIMP=.35:TIMP=.47]
       [LOSS= 2 :CN= 75.0]
       [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 183.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 33.81: SMAX=225.43: SK= .010]
R0010:C00402------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A10             4.14     .416 No_date   28:01   38.46  n/a     .000
     Major System   /     1.0 02:A10-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A10-MN          4.14     .310 No_date   27:55   38.48  n/a     .000
       {MjSysSto=.4172E+02, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00403------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A11            10.61    1.251 No_date   28:01   45.36 .701     .000
       [XIMP=.53:TIMP=.62]
       [LOSS= 2 :CN= 75.0]
       [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 379.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 33.81: SMAX=225.43: SK= .010]
R0010:C00404------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A11            10.61    1.251 No_date   28:01   45.36  n/a     .000
     Major System   /     1.0 02:A11-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A11-MN         10.61     .993 No_date   27:56   45.38  n/a     .000
       {MjSysSto=.1016E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00405------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:106-107       119.82    3.962 No_date   28:03   41.87  n/a     .000
                    +     1.0 02:A10-MN          4.14     .310 No_date   27:55   38.48  n/a     .000
                    +     1.0 02:A11-MN         10.61     .993 No_date   27:56   45.38  n/a     .000
                 SUM=     1.0 01:MH107         134.57    5.265 No_date   28:03   42.04  n/a     .000
R0010:C00406------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH107         134.57    5.265 No_date   28:03   42.04  n/a     .000
       fname :MH107.0010
       remark:Total Flows at MH107
R0010:C00407------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH107         134.57    5.265 No_date   28:03   42.04  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:107-119       134.57    5.251 No_date   28:05   42.04  n/a     .000
       [L/S/n=  114./ .120/.013]
       {Vmax= 1.912:Dmax= 1.640}
       [Din= 1.80:Dused= 2.00}
R0010:C00408------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:107-119       134.57    5.251 No_date   28:05   42.04  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:119-108       134.57    5.248 No_date   28:06   42.04  n/a     .000
       [L/S/n=   66./ .120/.013]
       {Vmax= 1.911:Dmax= 1.639}
       [Din= 1.80:Dused= 2.00}
R0010:C00409------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A12            12.29    1.385 No_date   28:01   41.19 .637     .000
       [XIMP=.41:TIMP=.54]
       [LOSS= 2 :CN= 75.0]
       [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 183.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 33.81: SMAX=225.43: SK= .010]
R0010:C00410------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A12            12.29    1.385 No_date   28:01   41.19  n/a     .000
     Major System   /     1.0 02:A12-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A12-MN         12.29    1.029 No_date   27:54   41.27  n/a     .000
       {MjSysSto=.1401E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00411------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A13             2.59     .368 No_date   28:01   51.11 .790     .000
       [XIMP=.71:TIMP=.71]
       [LOSS= 2 :CN= 75.0]
       [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 379.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 33.81: SMAX=225.43: SK= .010]
R0010:C00412------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A13             2.59     .368 No_date   28:01   51.11  n/a     .000
     Major System   /     1.0 02:A13-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A13-MN          2.59     .368 No_date   28:01   51.11  n/a     .000
R0010:C00413------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:Pond-Block      2.94     .309 No_date   28:00   38.90 .601     .000
       [XIMP=.41:TIMP=.41]
       [LOSS= 2 :CN= 75.0]
       [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 183.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 33.81: SMAX=225.43: SK= .010]
R0010:C00414------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:119-108       134.57    5.248 No_date   28:06   42.04  n/a     .000
                    +     1.0 02:A13-MN          2.59     .368 No_date   28:01   51.11  n/a     .000
                    +     1.0 02:A12-MN         12.29    1.029 No_date   27:54   41.27  n/a     .000
                 SUM=     1.0 01:MH108         149.45    6.598 No_date   28:04   42.14  n/a     .000
R0010:C00415------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH108         149.45    6.598 No_date   28:04   42.14  n/a     .000
       fname :MH108.0010
       remark:Total Flows at MH108
R0010:C00416------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH108         149.45    6.598 No_date   28:04   42.14  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:108-116       149.45    6.590 No_date   28:05   42.14  n/a     .000
       [L/S/n=   77./ .130/.013]
       {Vmax= 2.085:Dmax= 1.759}
       [Din= 1.80:Dused= 2.14}
R0010:C00417------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:108-116       149.45    6.590 No_date   28:05   42.14  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:116-corrig    149.45    6.577 No_date   28:06   42.14  n/a     .000
       [L/S/n=   80./ .130/.013]
       {Vmax= 2.084:Dmax= 1.758}
       [Din= 1.80:Dused= 2.14}
R0010:C00418------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:116-corrig    149.45    6.577 No_date   28:06   42.14  n/a     .000
                    +     1.0 02:Pond-Block      2.94     .309 No_date   28:00   38.90  n/a     .000
                 SUM=     1.0 01:Corrigan      152.39    6.779 No_date   28:05   42.08  n/a     .000
R0010:C00419------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:Corrigan      152.39    6.779 No_date   28:05   42.08  n/a     .000
       fname :Corrigan.0010
       remark:HYD_COMMENT=["Total Flows at Corrigan Pond]
R0010:C00420------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:Corrigan      152.39    6.779 No_date   28:05   42.08  n/a     .000
                out <=    1.0 01:Co-P          152.39    6.100 No_date   28:15   42.07  n/a     .000
           overflow <=    1.0 03:Co-P-OVF         .00     .000 No_date    0:00     .00  n/a     .000
      {MxStoUsed=.1015E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00421------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:Co-P-OVF         .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:Co-P          152.39    6.100 No_date   28:15   42.07  n/a     .000
                    +     1.0 02:N_TO        54837.78   85.488 No_date   37:22   23.06  n/a     .000
                    +     1.0 02:MH105-JR       28.70    7.335 No_date   28:05   41.72  n/a     .000
                    +     1.0 02:A8-MJ-JR         .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:A9-MJ            .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:A10-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:A11-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:A12-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:A13-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                 SUM=     1.0 01:corrig      55018.86   85.837 No_date   37:21   23.12  n/a     .000
R0010:C00422------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:corrig      55018.86   85.837 No_date   37:21   23.12  n/a     .000
       fname :corrig.0010
       remark:Total Flows at Corrigan Pond
#*****************************************************************************
#    Corrigan Pond 1
#    - Rating curve obtained from Barrhaven South MSS modeling
#    - Tributary Drainage Area to MSS Pond 1 = 145 ha
#*****************************************************************************
#
# Hydrograph from Corrigan Drain routed to Jockvale Road
# Channel X-Section obtained from RVCA Hydraulic Model - Station 2462
#
R0010:C00423------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:corrig      55018.86   85.837 No_date   37:21   23.12  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N_MI        55018.86   85.828 No_date   37:24   23.12  n/a     .000
       [L/S/n=  580./ .445/.045]
       {Vmax= 1.788:Dmax= 1.629}
#*****************************************************************************
#    Catchment MILLS
#    - To SWM Facility north of the Jock
#    - Primarily residental development
#*****************************************************************************
R0010:C00424------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:MILLS         175.99   12.212 No_date   28:07   36.76 .568     .000
       [XIMP=.38:TIMP=.38]
       [LOSS= 2 :CN= 74.0]
       [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI=1118.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 36.67: SMAX=244.49: SK= .010]
#*****************************************************************************
#    Chapman Mills SWM Pond
#    - Rating curve obtained from CCL hydraulic modeling
#*****************************************************************************
R0010:C00425------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:MILLS         175.99   12.212 No_date   28:07   36.76  n/a     .000
                out <=    1.0 01:MILL_P        175.99    4.030 No_date   28:43   36.76  n/a     .000
           overflow <=    1.0 03:MIL-OV           .00     .000 No_date    0:00     .00  n/a     .000
      {MxStoUsed=.2299E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00426------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N_MI        55018.86   85.828 No_date   37:24   23.12  n/a     .000
                    +     1.0 02:MIL-OV           .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:MILL_P        175.99    4.030 No_date   28:43   36.76  n/a     .000
                 SUM=     1.0 01:SN_MI       55194.85   86.233 No_date   37:23   23.16  n/a     .000
R0010:C00427------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_MI       55194.85   86.233 No_date   37:23   23.16  n/a     .000
       fname :SN_MI.0010
       remark:Total Flows at Jockvale Road
#
# Hydrograph from Jockvale Road routed to Heart's Desire
# Channel X-Section obtained from RVCA Hydraulic Model - Station 689
#
R0010:C00428------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_MI       55194.85   86.233 No_date   37:23   23.16  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N_DE        55194.85   86.067 No_date   37:44   23.16  n/a     .000
       [L/S/n= 1962./ .223/.045]
       {Vmax= 1.393:Dmax= 2.071}
#*****************************************************************************
#    Catchment DESIRE
#    - To Jock River (north of the Jock)
#    - Rural-estate subdivision (Heart's Desire Community)
#*****************************************************************************
R0010:C00429------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:DESIRE         23.78    1.694 No_date   28:03   32.93 .509     .000
       [XIMP=.25:TIMP=.25]
       [LOSS= 2 :CN= 77.0]
       [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 400.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 31.15: SMAX=207.66: SK= .010]
#*****************************************************************************
#    Catchment JOCKVA
#    - To Jockvale SWM Facility
#    - Residential development & golf course
#    - JFSA 2021-01-11 update JOCKVA after updating CORRIG as per IBI GROUP, July 2008.
#      JOCKVA area became 225.13 ha instead of 257.63 ha. JOCKVA separated into two areas JOCKVA and EX-LAND 32.5 ha as
#*****************************************************************************
R0010:C00430------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:JOCKVA        225.13   17.670 No_date   28:08   41.86 .647     .000
       [XIMP=.50:TIMP=.50]
       [LOSS= 2 :CN= 74.0]
       [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI=1311.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 36.67: SMAX=244.49: SK= .010]
R0010:C00431------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:EX-LAND-MN    32.50    2.275 No_date   27:55   41.99  n/a     .000
                    +     1.0 02:JOCKVA       225.13   17.670 No_date   28:08   41.86  n/a     .000
                    +     1.0 02:B2-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:B3-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                 SUM=     1.0 01:JOCKVA-TO    257.63   19.945 No_date   28:08   41.88  n/a     .000
R0010:C00432------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:JOCKVA-TO    257.63   19.945 No_date   28:08   41.88  n/a     .000
       fname :JOCKVA-TO.0010
       remark:Total Flows at KB first pond
#*****************************************************************************
#    Jockvale SWM Facility
#    - Rating curve obtained from Jockvale Servicing Study (CCL 1999)
#*****************************************************************************
R0010:C00433------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:JOCKVA-TO    257.63   19.945 No_date   28:08   41.88  n/a     .000
                out <=    1.0 01:JOCK_P       257.63    6.542 No_date   28:42   41.88  n/a     .000
           overflow <=    1.0 03:JO-OVF          .00     .000 No_date    0:00     .00  n/a     .000
      {MxStoUsed=.4673E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0010:C00434------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N_DE       55194.85   86.067 No_date   37:44   23.16  n/a     .000
                    +     1.0 02:DESIRE        23.78    1.694 No_date   28:03   32.93  n/a     .000
                    +     1.0 02:JO-OVF          .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:JOCK_P       257.63    6.542 No_date   28:42   41.88  n/a     .000
                 SUM=     1.0 01:SN_DE      55476.26   86.690 No_date   37:37   23.26  n/a     .000
R0010:C00435------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_DE      55476.26   86.690 No_date   37:37   23.26  n/a     .000
       fname :SN_DE.0010
       remark:Total Flows at Heart's Desire
#
# Hydrograph from Heart's Desire routed to Rideau River
# Channel X-Section obtained from RVCA Hydraulic Model - Station 0
#
R0010:C00436------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_DE      55476.26   86.690 No_date   37:37   23.26  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N1         55476.26   86.683 No_date   37:44   23.25  n/a     .000
       [L/S/n=  563./ .967/.045]
       {Vmax= 1.789:Dmax= 1.038}
#*****************************************************************************
#    Catchment S-2
#    - To Jock River (north and south)
#    - Undeveloped floodplain and river
#*****************************************************************************
R0010:C00437------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:S-2          102.94    2.957 No_date   28:20   23.57 .364     .000
       [CN= 72.0: N= 3.00: Tp=  .40]
       [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
       [InterEventTime=  12.00]
R0010:C00438------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N1         55476.26   86.683 No_date   37:44   23.25  n/a     .000
                    +     1.0 02:S-2          102.94    2.957 No_date   28:20   23.57  n/a     .000
                 SUM=     1.0 01:SN_N1      55579.20   86.846 No_date   37:44   23.26  n/a     .000
R0010:C00439------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_N1      55579.20   86.846 No_date   37:44   23.26  n/a     .000
       fname :SN_N1.0010
       remark:Total Flows at Rideau River
##############################################################################
  ** END OF RUN :   24

*******************************************************************************************





 RUN#:COMMAND#
R0025:C00001-----------------------------------------------------------------------------------
     START
       [TZERO =    .00 hrs on        0]
       [METOUT=   2    (1=imperial, 2=metric output)]
       [NSTORM=   1 ]
       [NRUN  = 0025 ]
#*****************************************************************************
#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
#*****************************************************************************
#  Project Name: [Jock River]    Project Number: [1474-16]
#  Date         : 04-03-2021
#  Modeller     : [M.M.]
#  Company      : JFSAinc.
#  License #    :  2549237
#*****************************************************************************
# CALIBRATION OF SUMMER MODEL PARAMETERS
# USING CONTINUOUS SIMULATIONS
# Rainfall data from JFSA raingauge installed at site + other gauges by the City
# Use data collected from May 1st to July 14, 2003
# 2020-11-30 change TMJSTO in COMPUTE DUALHYD (TMJSTO = 0.1 instead of 0.0001)
# 2020-12-01 correct pond curve values
# 2020-12-01 change W_CLAR_BRAZ XIMP to 0.55, SLPI=[0.5](%) (impervious slope), and LGI up to 700m
# 2021-02-19 Change the slope for ROUTE CHANNEL Station 2462 (NHYDout=["N_TO"] ,NHYDin=["SN_TO"]) from 0.033 % (as per S
# 2021-02-19 Change the slope for ROUTE CHANNEL Station 5002 (NHYDout=["N_WC"] ,NHYDin=["SN_CE"]) from 0.01 % (as per St
# ---------------------------------------------------------------------------
R0025:C00002-----------------------------------------------------------------------------------
     READ STORM
      Filename = storm.001
      Comment  = Pluie SCS de 24 hres 1:25 ans pour Ottawa CDA
      [SDT=10.00:SDUR=  24.00:PTOT=  74.39]
R0025:C00003-----------------------------------------------------------------------------------
     MODIFY STORM
      [RFACT=  1.00:TSHIFT= 960.00 min]
      [SDT=10.00:SDUR=  40.00:PTOT=  74.39]
R0025:C00004-----------------------------------------------------------------------------------
     DEFAULT VALUES
      Filename = T:\PROJ\1474-16\Design\20201026-QuantityControlAnalysis\SWMHYMO\SMR-Model\updated3\CitiGate.DEF
      ICASEdv  = 1 (read and print data)
      FileTitle= File comment: [Based onvarious calibration exercises in Onta
                 THE FOLLOWING PARAMETERS ARE USED IN THE DESIGN STANDHYD COM
      Horton's infiltration equation parameters:
      [Fo= 76.20 mm/hr] [Fc=13.20 mm/hr] [DCAY= 4.14 /hr] [F=  .00 mm]
      Parameters for PERVIOUS surfaces in STANDHYD:
      [IAper=   4.67 mm] [LGP=50.00 m] [MNP= .250]
      Parameters for IMPERVIOUS surfaces in STANDHYD:
      [IAimp=   1.57 mm] [CLI= 1.50]   [MNI= .013]
      Parameters used in NASHYD:
      [Ia=   4.67 mm] [N= 3.00]
      Average monthly Pan Evaporation data in    (mm)
   JAN   FEB   MAR   APR   MAY   JUN   JUL   AUG   SEP   OCT   NOV   DEC
   .00   .00   .00   .00   .00   .00   .00   .00   .00   .00   .00   .00
      Average monthly Potential Evapotranspiration in    (mm)
   JAN   FEB   MAR   APR   MAY   JUN   JUL   AUG   SEP   OCT   NOV   DEC
   .00   .00   .00   .00   .00   .00   .00   .00   .00   .00   .00   .00
R0025:C00005-----------------------------------------------------------------------------------
     COMPUTE API
      [APIini= 50.00: APIkdy= .8500: APIkdt= .9989]
      {APImax=106.76: APIavg= 65.09: APImin= 44.87}
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.32
R0025:C00006------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:JR_HW       3680.00   15.500 No_date   36:57   25.80 .347     .000
      [CN= 64.0: N= 3.00: Tp= 7.13]
      [IaREC= 4.00: SMIN= 57.05: SMAX=380.32: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.32
R0025:C00007------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_13        971.00    5.778 No_date   32:34   24.02 .323     .000
      [CN= 61.0: N= 3.00: Tp= 3.76]
      [IaREC= 4.00: SMIN= 64.50: SMAX=430.01: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.80
R0025:C00008------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:JR_GWM      3074.00    7.521 No_date   39:59   20.65 .278     .000
      [CN= 55.0: N= 3.00: Tp=11.33]
      [IaREC= 4.00: SMIN= 83.24: SMAX=554.96: SK= .010]
      [InterEventTime=  12.00]
R0025:C00009------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:JR_ASH      1781.00   14.166 No_date   32:40   31.50 .423     .000
      [CN= 72.0: N= 3.00: Tp= 3.91]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
R0025:C00010------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_11        500.00    7.521 No_date   29:22   27.01 .363     .000
```

```
       [CN= 66.0: N= 3.00: Tp= 1.24]
       [IaREC= 4.00: SMIN= 52.62: SMAX=350.79: SK= .010]
       [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.80
R0025:C00011------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:NN_CK       1917.00   10.351 No_date   34:27   27.01 .363     .000
       [CN= 66.0: N= 3.00: Tp= 5.29]
       [IaREC= 4.00: SMIN= 52.62: SMAX=350.79: SK= .010]
       [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.52
R0025:C00012------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_10       5666.00   27.457 No_date   37:54   31.50 .423     .000
       [CN= 72.0: N= 3.00: Tp= 8.00]
       [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
       [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.75
R0025:C00013------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:KG_CK       8376.00   26.276 No_date   39:59   27.01 .363     .000
       [CN= 66.0: N= 3.00: Tp=11.66]
       [IaREC= 4.00: SMIN= 52.62: SMAX=350.79: SK= .010]
       [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.68
R0025:C00014------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_9        1132.00   11.752 No_date   30:54   30.18 .406     .000
       [CN= 70.0: N= 3.00: Tp= 2.51]
       [IaREC= 4.00: SMIN= 43.07: SMAX=287.10: SK= .010]
       [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.82
R0025:C00015------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:NC_CK       4464.00   13.075 No_date   39:59   24.61 .331     .000
       [CN= 62.0: N= 3.00: Tp=11.32]
       [IaREC= 4.00: SMIN= 61.90: SMAX=412.66: SK= .010]
       [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.80
R0025:C00016------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_8         131.00    2.266 No_date   28:57   25.20 .339     .000
       [CN= 63.0: N= 3.00: Tp=  .90]
       [IaREC= 4.00: SMIN= 59.42: SMAX=396.11: SK= .010]
       [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.65
R0025:C00017------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:HB_DR       3854.00   15.333 No_date   38:34   27.01 .363     .000
       [CN= 66.0: N= 3.00: Tp= 8.42]
       [IaREC= 4.00: SMIN= 52.62: SMAX=350.79: SK= .010]
       [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.82
R0025:C00018------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_7        3197.00   11.663 No_date   36:24   21.75 .292     .000
       [CN= 57.0: N= 3.00: Tp= 6.65]
       [IaREC= 4.00: SMIN= 76.32: SMAX=508.81: SK= .010]
       [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.75
R0025:C00019------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_6         165.00    1.076 No_date   33:03   27.63 .371     .000
       [CN= 67.0: N= 3.00: Tp= 4.18]
       [IaREC= 4.00: SMIN= 50.55: SMAX=336.97: SK= .010]
       [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.67
R0025:C00020------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:VG_DR       1332.00    7.882 No_date   35:14   31.50 .423     .000
       [CN= 72.0: N= 3.00: Tp= 5.95]
       [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
       [InterEventTime=  12.00]
R0025:C00021------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_5         224.00    6.882 No_date   28:45   35.66 .479     .000
       [CN= 77.0: N= 3.00: Tp=  .75]
       [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
       [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.20
R0025:C00022------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:FL_CK       4945.00   37.664 No_date   33:18   32.85 .442     .000
       [CN= 74.0: N= 3.00: Tp= 4.45]
       [IaREC= 4.00: SMIN= 36.67: SMAX=244.49: SK= .010]
       [InterEventTime=  12.00]
R0025:C00023------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_5A2        20.00     .798 No_date   28:35   39.36 .529     .000
       [CN= 81.0: N= 3.00: Tp=  .62]
       [IaREC= 4.00: SMIN= 25.21: SMAX=168.09: SK= .010]
       [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.61
R0025:C00024------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_5A1      1412.00    7.480 No_date   37:50   34.24 .460     .000
       [CN= 75.0: N= 3.00: Tp= 8.00]
       [IaREC= 4.00: SMIN= 33.81: SMAX=225.43: SK= .010]
       [InterEventTime=  12.00]
R0025:C00025------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_4         585.00   10.942 No_date   29:56   39.36 .529     .000
       [CN= 81.0: N= 3.00: Tp= 1.75]
       [IaREC= 4.00: SMIN= 25.21: SMAX=168.09: SK= .010]
       [InterEventTime=  12.00]
R0025:C00026------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:LM_CK       1021.00   14.476 No_date   30:46   38.60 .519     .000
       [CN= 80.0: N= 3.00: Tp= 2.46]
       [IaREC= 4.00: SMIN= 26.32: SMAX=175.50: SK= .010]
       [InterEventTime=  12.00]
R0025:C00027------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_2         177.00    5.438 No_date   28:45   35.66 .479     .000
       [CN= 77.0: N= 3.00: Tp=  .75]
       [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
       [InterEventTime=  12.00]
R0025:C00028------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SM_DR       1122.00   13.229 No_date   31:45   39.36 .529     .000
       [CN= 81.0: N= 3.00: Tp= 3.25]
       [IaREC= 4.00: SMIN= 25.21: SMAX=168.09: SK= .010]
       [InterEventTime=  12.00]
R0025:C00029------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:MO_DR       2737.00   29.508 No_date   31:30   34.94 .470     .000
       [CN= 76.0: N= 3.00: Tp= 3.03]
       [IaREC= 4.00: SMIN= 32.46: SMAX=216.39: SK= .010]
       [InterEventTime=  12.00]
#
# Routing hydrographs
#
# Starting with the addition of Jock River Headwater and Subwatershed 13
#
R0025:C00030------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:JR_HW       3680.00   15.500 No_date   36:56   25.80  n/a     .000
                     +    1.0 02:SW_13        971.00    5.778 No_date   32:34   24.02  n/a     .000
                  SUM=    1.0 01:S_N13       4651.00   19.777 No_date   35:26   25.42  n/a     .000
#
# Sum of hydrographs from Node 13 routed to Node 13A
# (Approximated cross-section - see cross-section 258)
# Use n=0.04 for summer conditions and n=0.025 for spring conditions
#
R0025:C00031------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N13       4651.00   19.777 No_date   35:26   25.42  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N13A        4651.00   15.935 No_date   39:17   25.42  n/a     .000
      [L/S/n= 9074./ .022/.040]
      {Vmax=  .548:Dmax= 3.659}
#
# Addition of Subwatershed Jock River at Goodwood Marsh to Node 13A
#
R0025:C00032------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N13A        4651.00   15.935 No_date   39:17   25.42  n/a     .000
                     +    1.0 02:JR_GWM      3074.00    7.521 No_date   39:59   20.65  n/a     .000
                  SUM=    1.0 01:SN13A       7725.00   23.402 No_date   39:59   23.52  n/a     .000
#
# Insertion of a reservoir to simulate the effects of the Goodwood Marsh
#
R0025:C00033------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:SN13A       7725.00   23.402 No_date   39:59   23.52  n/a     .000
                 out <=   1.0 01:RES_GM      7725.00    3.678 No_date   60:27   23.52  n/a     .000
     {MxStoUsed=.1192E+03  m3}
#
R0025:C00034------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:RES_GM      7725.00    3.678 No_date   60:27   23.52  n/a     .000
      fname :H_RESGM
      remark:Outflow from Res GM
# Output of Reservoir Goodwood Marsh routed from Node 13A to Node 12
# (Approximated cross-section - see cross-section 258)
# Use n=0.04 for summer conditions and n=0.025 for spring conditions
R0025:C00035------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:RES_GM      7725.00    3.678 No_date   60:27   23.52  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N12         7725.00    3.675 No_date   63:05   23.52  n/a     .000
      [L/S/n= 5926./ .076/.040]
      {Vmax=  .552:Dmax= 1.524}
#
# Addition of Subwatershed Jock River at Ashton to Node 12
#
R0025:C00036------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N12         7725.00    3.675 No_date   63:05   23.52  n/a     .000
                     +    1.0 02:JR_ASH      1781.00   14.166 No_date   32:40   31.50  n/a     .000
                  SUM=    1.0 01:S_N12       9506.00   16.182 No_date   32:43   25.02  n/a     .000
R0025:C00037------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:S_N12       9506.00   16.182 No_date   32:43   25.02  n/a     .000
      fname :H_SN12
      remark:flow at S_N12 near Ashton
#
# Sum of hydrographs from Node 12 routed to Node 11
# (Approximated cross-section - see cross-section 258)
# Use n=0.04 for summer conditions and n=0.025 for spring conditions
#
# Sum of hydrographs from Node 12 routed to Node 11 with Dummy section 248
#
R0025:C00038------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N12       9506.00   16.182 No_date   32:43   25.02  n/a     .000
     [RDT= 1.00] out<-    1.0 01:Dum11       9506.00   16.007 No_date   33:02   25.02  n/a     .000
      [L/S/n=  972./ .054/.040]
      {Vmax=  .721:Dmax= 2.847}
#
# Addition of Subwatershed 11 and No Name Creek to Node 11
#
R0025:C00039------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:Dum11       9506.00   16.007 No_date   33:02   25.02  n/a     .000
                     +    1.0 02:SW_11        500.00    7.521 No_date   29:22   27.01  n/a     .000
                     +    1.0 02:NN_CK       1917.00   10.351 No_date   34:27   27.01  n/a     .000
                  SUM=    1.0 01:S_N11      11923.00   27.908 No_date   33:04   25.42  n/a     .000
#
# Sum of hydrographs from Node 11 routed to Node 10
# Section 1
#
R0025:C00040------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N11      11923.00   27.908 No_date   33:04   25.42  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N10        11923.00   18.039 No_date   40:01   25.42  n/a     .000
      [L/S/n=14028./ .157/.040]
      {Vmax=  .464:Dmax= 1.329}
#
# Addition of Subwatershed 10 to Node 10
#
R0025:C00041------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N10        11923.00   18.039 No_date   40:01   25.42  n/a     .000
                     +    1.0 02:SW_10       5666.00   27.457 No_date   37:54   31.50  n/a     .000
                  SUM=    1.0 01:S_N10      17589.00   45.026 No_date   38:35   27.38  n/a     .000
R0025:C00042------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:S_N10      17589.00   45.026 No_date   38:35   27.38  n/a     .000
      fname :H_SN10
      remark:flow at S_N10: N10 + SW_10
# Addition of Kings Creek to S_N10
#
R0025:C00043------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:S_N10      17589.00   45.026 No_date   38:35   27.38  n/a     .000
                     +    1.0 02:KG_CK       8376.00   26.276 No_date   39:59   27.01  n/a     .000
                  SUM=    1.0 01:S_N10A     25965.00   70.812 No_date   39:59   27.26  n/a     .000
#
# Sum of hydrographs from Node 10 routed to Node 9
# Section 2
#
R0025:C00044------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N10A     25965.00   70.812 No_date   39:59   27.26  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N9         25965.00   69.032 No_date   39:59   27.26  n/a     .000
      [L/S/n= 3982./ .075/.040]
      {Vmax=  .718:Dmax= 1.889}
#
# Addition of Subwatershed 9 and Nichols Creek to Node 9
#
R0025:C00045------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N9         25965.00   69.032 No_date   39:59   27.26  n/a     .000
                     +    1.0 02:SW_9        1132.00   11.752 No_date   30:54   30.18  n/a     .000
                     +    1.0 02:NC_CK       4464.00   13.075 No_date   39:59   24.61  n/a     .000
                  SUM=    1.0 01:S_N9       31561.00   84.684 No_date   39:59   26.99  n/a     .000
#
# Sum of hydrographs from Node 9 routed to Node 8
# Section 3
#
R0025:C00046------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N9       31561.00   84.684 No_date   39:59   26.99  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N8         31561.00   79.245 No_date   39:59   26.99  n/a     .000
      [L/S/n= 2269./ .088/.045]
      {Vmax=  .363:Dmax= 1.743}
#
# Addition of Subwatershed 8 and Hobb's Drain to Node 8
#
R0025:C00047------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N8         31561.00   79.245 No_date   39:59   26.99  n/a     .000
                     +    1.0 02:SW_8         131.00    2.266 No_date   28:57   25.20  n/a     .000
                     +    1.0 02:HB_DR       3854.00   15.333 No_date   38:34   27.01  n/a     .000
                  SUM=    1.0 01:S_N8       35546.00   94.597 No_date   39:59   26.99  n/a     .000
#
# Sum of hydrographs from Node 8 routed to Node 7
# Section 4
#
R0025:C00048------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N8       35546.00   94.597 No_date   39:59   26.99  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N7         35546.00   80.337 No_date   45:08   26.98  n/a     .000
      [L/S/n= 3750./ .053/.070]
      {Vmax=  .226:Dmax= 2.161}
#
# Addition of Subwatershed 7 to Node 7
#
R0025:C00049------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N7         35546.00   80.337 No_date   45:08   26.98  n/a     .000
                     +    1.0 02:SW_7        3197.00   11.663 No_date   36:24   21.75  n/a     .000
                  SUM=    1.0 01:S_N7       38743.00   86.331 No_date   44:08   26.55  n/a     .000
R0025:C00050------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:S_N7       38743.00   86.331 No_date   44:08   26.55  n/a     .000
      fname :H_SN7
      remark:flow at S_N7: N7 + SW_7
# Insertion of a reservoir to simulate the effects of the Richmond Fen.
# Storage area and volumes were estimated from available topo maps.
# Release rate from fen was assumed to be controlled by the downstream
# river cross-section for summer conditions.  It is was assumed that for up to
# 0.75 m of water, the main channel of the river provided the storage.  Above
# this depth, the wetland starts to signigicantly store water.
#
R0025:C00051------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:S_N7       38743.00   86.331 No_date   44:08   26.55  n/a     .000
                 out <=   1.0 01:RES_RF     38743.00   42.032 No_date   60:05   26.55  n/a     .000
     {MxStoUsed=.3671E+03  m3}
R0025:C00052------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:RES_RF     38743.00   42.032 No_date   60:05   26.55  n/a     .000
      fname :H_ResRF
      remark:outflow of Richmond Fen
#
# Sum of hydrographs from Node 7 routed to Node 6
# Section 5
#
R0025:C00053------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:RES_RF     38743.00   42.032 No_date   60:05   26.55  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N6         38743.00   41.826 No_date   61:26   26.55  n/a     .000
      [L/S/n= 3056./ .082/.025]
      {Vmax=  .514:Dmax= 1.120}
#
# Addition of Subwatershed 6 and Van Gaal Drain to Node 6
#
R0025:C00054------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N6         38743.00   41.826 No_date   61:26   26.55  n/a     .000
                     +    1.0 02:SW_6         165.00    1.076 No_date   33:03   27.63  n/a     .000
                     +    1.0 02:VG_DR       1332.00    7.882 No_date   35:14   31.50  n/a     .000
                  SUM=    1.0 01:S_N6       40240.01   41.832 No_date   61:20   26.72  n/a     .000
#
# Sum of hydrographs from Node 6 routed to Node 5
# Section 6
#
R0025:C00055------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N6       40240.01   41.832 No_date   61:20   26.72  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N5         40240.01   41.717 No_date   62:14   26.72  n/a     .000
      [L/S/n= 1852./ .054/.035]
      {Vmax=  .444:Dmax= 1.222}
#
# Addition of Subwatershed 5 and Flowing Creek to Node 5
#
R0025:C00056------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N5         40240.01   41.717 No_date   62:14   26.72  n/a     .000
                     +    1.0 02:SW_5         224.00    6.882 No_date   28:45   35.66  n/a     .000
                     +    1.0 02:FL_CK       4945.00   37.664 No_date   33:18   32.85  n/a     .000
                  SUM=    1.0 01:S_N5       45409.01   62.634 No_date   34:27   27.43  n/a     .000
#
# Sum of hydrographs from Node 5 routed to Node 5A
# Section 7
#
R0025:C00057------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N5       45409.01   62.634 No_date   34:27   27.43  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N5A        45409.01   62.487 No_date   34:43   27.43  n/a     .000
      [L/S/n=  556./ .090/.040]
      {Vmax=  .511:Dmax= 1.222}
#
# Addition of Subwatershed 5A1 and Subwatershed 5A2 to Node 5A
#
R0025:C00058------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N5A        45409.01   62.487 No_date   34:43   27.43  n/a     .000
                     +    1.0 02:SW_5A2        20.00     .798 No_date   28:35   39.36  n/a     .000
                     +    1.0 02:SW_5A1      1412.00    7.480 No_date   37:50   34.24  n/a     .000
                  SUM=    1.0 01:S_N5A      46841.01   69.334 No_date   35:01   27.64  n/a     .000
#
# Sum of hydrographs from Node 5A routed to Node 4
# Section 8
#
R0025:C00059------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N5A      46841.01   69.334 No_date   35:01   27.64  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N4         46841.01   66.496 No_date   36:27   27.64  n/a     .000
      [L/S/n= 4630./ .043/.035]
      {Vmax=  .840:Dmax= 3.530}
#
# Addition of Subwatershed 4 and Leamy Creek to Node 4
#
R0025:C00060------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N4         46841.01   66.496 No_date   36:27   27.64  n/a     .000
                     +    1.0 02:SW_4         585.00   10.942 No_date   29:56   39.36  n/a     .000
                     +    1.0 02:LM_CK       1021.00   14.476 No_date   30:46   38.60  n/a     .000
                  SUM=    1.0 01:S_N4       48447.00   73.819 No_date   35:41   28.02  n/a     .000
```

```
R0025:C00061-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:S_N4       48447.00   73.819 No_date   35:41   28.02  n/a     .000
      fname :S_N4.0025
      remark:flow at S_N4
#
# Sum of hydrographs from Node 4 routed to Node 2
# Section 9
#
R0025:C00062-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N4       48447.00   73.819 No_date   35:41   28.02  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N2         48447.00   73.485 No_date   35:42   28.02  n/a     .000
      [L/S/n= 1667./ .060/.040]
      {Vmax=  .874:Dmax= 3.570}
#
# Addition of Subwatershed 2 with Monohan Drain and Smith Drain to Node 2
#
R0025:C00063-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N2         48447.00   73.485 No_date   35:42   28.02  n/a     .000
                   +      1.0 02:SW_2         177.00    5.438 No_date   28:45   35.66  n/a     .000
                   +      1.0 02:SM_DR       1122.00   13.229 No_date   31:45   39.36  n/a     .000
                   +      1.0 02:MO_DR       2737.00   29.508 No_date   31:30   34.94  n/a     .000
                SUM=      1.0 01:S_N2       52483.00  106.109 No_date   33:07   28.64  n/a     .000
R0025:C00064-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:S_N2       52483.00  106.109 No_date   33:07   28.64  n/a     .000
      fname :H_SN2
      remark:flow at S_N2 Jock River Gauge at Moodie Dr.
#
# Sum of hydrographs from Node 2 routed to Node 1
# Section 10
#
#******************************************************************************
#
# Hydrograph from Node 2 routed to Node 416
# Channel X-Section obtained from RVCA Hydraulic Model - Station 9025
#
R0025:C00065-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N2       52483.00  106.109 No_date   33:07   28.64  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N_416      52483.00  103.234 No_date   34:03   28.64  n/a     .000
      [L/S/n= 2327./ .050/.055]
      {Vmax=  .754:Dmax= 3.305}
#******************************************************************************
#    Catchment SW-1a
#    - Portion of RVCA catchment SW_1 outside of Reach 1 subwatershed
#    - Undeveloped agricultural land
#******************************************************************************
R0025:C00066-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_1a        536.42    5.154 No_date   31:16   30.13 .405     .000
      [CN= 72.0: N= 3.00: Tp= 2.79]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
R0025:C00067-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-Okeefe    44.93    6.507 No_date   28:03   57.38 .771     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .75:LGI= 547.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0025:C00068-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:S-1-Okeefe    44.93    6.507 No_date   28:03   57.38  n/a     .000
     Major System   /     1.0 02:S-1-OkMJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:S-1-OkMN      44.93    4.591 No_date   27:56   57.68  n/a     .000
      {MjSysSto=.1037E+04, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00069-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:S-1-OkMJ        .00     .000 No_date    0:00     .00  n/a     .000
                   +      1.0 02:S-1-OkMN      44.93    4.591 No_date   27:56   57.68  n/a     .000
                SUM=      1.0 01:S-1-OkS       44.93    4.591 No_date   27:56   57.68  n/a     .000
R0025:C00070-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:S-1-OkS       44.93    4.591 No_date   27:56   57.68  n/a     .000
                out <=    1.0 01:S-1-OkSR      44.93     .467 No_date   29:26   57.68  n/a     .000
           overflow <=    1.0 03:S-1-OkSovf      .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.1559E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00071-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N_416      52483.00  103.234 No_date   34:03   28.64  n/a     .000
                   +      1.0 02:SW_1a        536.42    5.154 No_date   31:16   30.13  n/a     .000
                   +      1.0 02:S-1-OkSR      44.93     .467 No_date   29:26   57.68  n/a     .000
                   +      1.0 02:S-1-OkSovf      .00     .000 No_date    0:00     .00  n/a     .000
                SUM=      1.0 01:SN_416     53064.36  107.436 No_date   33:26   28.68  n/a     .000
R0025:C00072-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_416     53064.36  107.436 No_date   33:26   28.68  n/a     .000
      fname :SN_416.0025
      remark:Total Flows at Highway 416 before Station 7245
#
# Hydrograph from Node 416 routed to Node at Okeefe drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 7245
#
R0025:C00073-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_416     53064.36  107.436 No_date   33:26   28.68  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N_OK       53064.36  107.360 No_date   33:27   28.68  n/a     .000
      [L/S/n=  497./ .302/.055]
      {Vmax= 1.569:Dmax= 2.814}
#******************************************************************************
#    Catchment OKEEFE
#    - To O'Keefe drain (north of the Jock)
#    - Developed with assumed 43% imp.
#    - 2020-12-01 add Okeefe model (Area 513.02 HA) instead of current Okeefe (Area 513.02 HA)
#    - 2020-11-20 Okeefe detailed model was added as per the NOVATECH SWMHYMO model (Citi-Gate 2014).
#******************************************************************************
R0025:C00074-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:O-1           63.72     .937 No_date   28:58   22.21 .299     .000
      [CN= 61.0: N= 3.00: Tp=  .90]
      [IaREC= 4.00: SMIN= 64.50: SMAX=430.01: SK= .010]
      [InterEventTime=  12.00]
R0025:C00075-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:O-1           63.72     .937 No_date   28:58   22.21  n/a     .000
     [RDT= 1.00] out<-    1.0 01:O-1R          63.72     .877 No_date   29:15   22.21  n/a     .000
      [L/S/n=  960./ .630/.043]
      {Vmax=  .829:Dmax=  .398}
R0025:C00076-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:O-2           28.61     .330 No_date   29:13   20.55 .276     .000
      [CN= 57.0: N= 3.00: Tp= 1.10]
      [IaREC= 4.00: SMIN= 76.32: SMAX=508.81: SK= .010]
      [InterEventTime=  12.00]
R0025:C00077-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:O-4           46.94     .426 No_date   29:00   15.62 .210     .000
      [CN= 49.0: N= 3.00: Tp=  .90]
      [IaREC= 4.00: SMIN=104.59: SMAX=697.25: SK= .010]
      [InterEventTime=  12.00]
R0025:C00078-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:O-1R          63.72     .877 No_date   29:15   22.21  n/a     .000
                   +      1.0 02:O-2           28.61     .330 No_date   29:13   20.55  n/a     .000
                   +      1.0 02:O-4           46.94     .426 No_date   29:00   15.62  n/a     .000
                SUM=      1.0 01:OKF-N        139.27    1.623 No_date   29:11   19.65  n/a     .000
R0025:C00079-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:OKF-N        139.27    1.623 No_date   29:11   19.65  n/a     .000
     [RDT= 1.00] out<-    1.0 01:OKF-NR       139.27    1.620 No_date   29:14   19.65  n/a     .000
      [L/S/n=  210./ .810/.043]
      {Vmax=  .998:Dmax=  .685}
R0025:C00080-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:O-6           16.46     .143 No_date   28:45   13.49 .181     .000
      [CN= 43.0: N= 3.00: Tp=  .70]
      [IaREC= 4.00: SMIN=134.47: SMAX=896.47: SK= .010]
      [InterEventTime=  12.00]
R0025:C00081-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:O-3           39.67    1.013 No_date   28:23   24.45 .329     .000
      [XIMP=.15:TIMP=.30]
      [LOSS= 2 :CN= 50.0]
      [Pervious     area: IAper= 4.67:SLPP= .32:LGP= 440.:MNP=.035:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .32:LGI=1880.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 99.77: SMAX=665.12: SK= .010]
R0025:C00082-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:O-5           60.63    2.500 No_date   28:10   28.05 .377     .000
      [XIMP=.13:TIMP=.26]
      [LOSS= 2 :CN= 61.0]
      [Pervious     area: IAper= 4.67:SLPP=1.38:LGP= 550.:MNP=.035:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.38:LGI=1450.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 64.50: SMAX=430.01: SK= .010]
R0025:C00083-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:OKF-NR       139.27    1.620 No_date   29:14   19.65  n/a     .000
                   +      1.0 02:O-3           39.67    1.013 No_date   28:23   24.45  n/a     .000
                   +      1.0 02:O-5           60.63    2.500 No_date   28:10   28.05  n/a     .000
                   +      1.0 02:O-6           16.46     .143 No_date   28:45   13.49  n/a     .000
                SUM=      1.0 01:PT1          256.03    4.071 No_date   28:22   21.98  n/a     .000
R0025:C00084-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:O-7            5.28     .078 No_date   28:37   18.08 .243     .000
      [CN= 54.0: N= 3.00: Tp=  .60]
      [IaREC= 4.00: SMIN= 87.01: SMAX=580.07: SK= .010]
      [InterEventTime=  12.00]
R0025:C00085-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:PT1          256.03    4.071 No_date   28:22   21.98  n/a     .000
                   +      1.0 02:O-7            5.28     .078 No_date   28:37   18.08  n/a     .000
                SUM=      1.0 01:FF           261.31    4.141 No_date   28:22   21.91  n/a     .000
R0025:C00086-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:FF           261.31    4.141 No_date   28:22   21.91  n/a     .000
     [RDT= 1.00] out<-    1.0 01:DRAIN1       261.31    4.014 No_date   28:28   21.91  n/a     .000
      [L/S/n=  302./1.000/.043]
      {Vmax=  .793:Dmax=  .719}
R0025:C00087-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:D1             1.17     .078 No_date   28:12   37.38 .502     .000
      [CN= 84.0: N= 3.00: Tp=  .28]
      [IaREC= 4.00: SMIN= 21.09: SMAX=140.62: SK= .010]
      [InterEventTime=  12.00]
R0025:C00088-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A1             2.50     .464 No_date   28:01   58.43 .785     .000
      [XIMP=.68:TIMP=.85]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 224.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00089-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:A1             2.50     .464 No_date   28:01   58.43  n/a     .000
                out <=    1.0 01:A1-STR         2.50     .117 No_date   28:22   58.43  n/a     .000
           overflow <=    1.0 03:A1-OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.6660E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00090-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:ST-2            .59     .091 No_date   28:00   45.54 .612     .000
      [XIMP=.46:TIMP=.57]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 109.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00091-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:ST-2            .59     .091 No_date   28:00   45.54  n/a     .000
                out <=    1.0 01:ST2STR          .59     .052 No_date   28:07   45.54  n/a     .000
           overflow <=    1.0 03:ST2OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.2899E-02  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00092-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:O-8           60.55    1.147 No_date   29:04   28.63 .385     .000
      [CN= 69.0: N= 3.00: Tp= 1.00]
      [IaREC= 4.00: SMIN= 44.82: SMAX=298.82: SK= .010]
      [InterEventTime=  12.00]
R0025:C00093-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:O-8           60.55    1.147 No_date   29:04   28.63  n/a     .000
     [RDT= 1.00] out<-    1.0 01:O8PIPE        60.55    1.141 No_date   29:08   28.63  n/a     .000
      [L/S/n=  335./ .100/.013]
      {Vmax= 1.178:Dmax=  .540}
      {HGTH= 1.20:WDTH= 1.80}
R0025:C00094-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:DRAIN1       261.31    4.014 No_date   28:28   21.91  n/a     .000
                   +      1.0 02:D1             1.17     .078 No_date   28:12   37.38  n/a     .000
                   +      1.0 02:A1-STR         2.50     .117 No_date   28:22   58.43  n/a     .000
                   +      1.0 02:A1-OVF          .00     .000 No_date    0:00     .00  n/a     .000
                   +      1.0 02:ST2STR          .59     .052 No_date   28:07   45.54  n/a     .000
                   +      1.0 02:ST2OVF          .00     .000 No_date    0:00     .00  n/a     .000
                   +      1.0 02:O8PIPE        60.55    1.141 No_date   29:08   28.63  n/a     .000
                SUM=      1.0 01:ST2-IN       326.12    5.017 No_date   28:36   23.53  n/a     .000
R0025:C00095-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A7             3.51     .635 No_date   28:01   58.43 .785     .000
      [XIMP=.68:TIMP=.85]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 265.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00096-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:A7             3.51     .635 No_date   28:01   58.43  n/a     .000
                out <=    1.0 01:A7-STR         3.51     .164 No_date   28:23   58.43  n/a     .000
           overflow <=    1.0 03:A7-OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.9358E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00097-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:ST-3            .71     .108 No_date   28:00   45.54 .612     .000
      [XIMP=.46:TIMP=.57]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 119.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00098-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:ST-3            .71     .108 No_date   28:00   45.54  n/a     .000
                out <=    1.0 01:ST3STR          .71     .063 No_date   28:08   45.54  n/a     .000
           overflow <=    1.0 03:ST3OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.3355E-02  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00099-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:ST2-IN       326.12    5.017 No_date   28:36   23.53  n/a     .000
                   +      1.0 02:A7-STR         3.51     .164 No_date   28:23   58.43  n/a     .000
                   +      1.0 02:A7-OVF          .00     .000 No_date    0:00     .00  n/a     .000
                   +      1.0 02:ST3STR          .71     .063 No_date   28:08   45.54  n/a     .000
                   +      1.0 02:ST3OVF          .00     .000 No_date    0:00     .00  n/a     .000
                SUM=      1.0 01:PT2ST3       330.34    5.204 No_date   28:28   23.95  n/a     .000
R0025:C00100-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:PT2ST3       330.34    5.204 No_date   28:28   23.95  n/a     .000
     [RDT= 1.00] out<-    1.0 01:DRAIN2       330.34    4.806 No_date   29:00   23.95  n/a     .000
      [L/S/n=  592./ .230/.043]
      {Vmax=  .581:Dmax= 1.088}
R0025:C00101-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:D2             2.28     .062 No_date   29:03   37.38 .502     .000
      [CN= 84.0: N= 3.00: Tp=  .99]
      [IaREC= 4.00: SMIN= 21.09: SMAX=140.62: SK= .010]
      [InterEventTime=  12.00]
R0025:C00102-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A17           12.04    1.933 No_date   28:03   58.43 .785     .000
      [XIMP=.68:TIMP=.85]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 491.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00103-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:A17           12.04    1.933 No_date   28:03   58.43  n/a     .000
                out <=    1.0 01:A17STR        12.04     .553 No_date   28:29   58.43  n/a     .000
           overflow <=    1.0 03:A17OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.3155E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00104-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:ST-4            .35     .055 No_date   28:00   45.54 .612     .000
      [XIMP=.46:TIMP=.57]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=  84.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00105-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:ST-4            .35     .055 No_date   28:00   45.54  n/a     .000
                out <=    1.0 01:ST4STR          .35     .031 No_date   28:07   45.54  n/a     .000
           overflow <=    1.0 03:ST4OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.2092E-02  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00106-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A18            5.30     .922 No_date   28:02   58.43 .785     .000
      [XIMP=.68:TIMP=.85]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 326.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00107-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:A18            5.30     .922 No_date   28:02   58.43  n/a     .000
                out <=    1.0 01:A18STR         5.30     .247 No_date   28:25   58.43  n/a     .000
           overflow <=    1.0 03:A18OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.1408E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00108-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:DRAIN2       330.34    4.806 No_date   29:00   23.95  n/a     .000
                   +      1.0 02:D2             2.28     .062 No_date   29:03   37.38  n/a     .000
                   +      1.0 02:A17STR        12.04     .553 No_date   28:29   58.43  n/a     .000
                   +      1.0 02:A17OVF          .00     .000 No_date    0:00     .00  n/a     .000
                   +      1.0 02:ST4STR          .35     .031 No_date   28:07   45.54  n/a     .000
                   +      1.0 02:ST4OVF          .00     .000 No_date    0:00     .00  n/a     .000
                   +      1.0 02:A18STR         5.30     .247 No_date   28:25   58.43  n/a     .000
                   +      1.0 02:A18OVF          .00     .000 No_date    0:00     .00  n/a     .000
                SUM=      1.0 01:PT3ST4       350.31    5.557 No_date   28:56   25.77  n/a     .000
R0025:C00109-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:PT3ST4       350.31    5.557 No_date   28:56   25.77  n/a     .000
     [RDT= 1.00] out<-    1.0 01:DRAIN3       350.31    5.293 No_date   29:13   25.77  n/a     .000
      [L/S/n=  525./ .230/.043]
      {Vmax=  .603:Dmax= 1.137}
R0025:C00110-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:D3             2.51     .095 No_date   28:43   40.67 .547     .000
      [CN= 86.0: N= 3.00: Tp=  .73]
      [IaREC= 4.00: SMIN= 17.43: SMAX=116.21: SK= .010]
      [InterEventTime=  12.00]
R0025:C00111-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:C1             3.41     .618 No_date   28:01   58.43 .785     .000
      [XIMP=.68:TIMP=.85]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 261.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00112-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:C1             3.41     .618 No_date   28:01   58.43  n/a     .000
                out <=    1.0 01:C1-STR         3.41     .159 No_date   28:23   58.43  n/a     .000
           overflow <=    1.0 03:C1-OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.9080E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00113-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:ST-5            .45     .071 No_date   28:00   45.54 .612     .000
      [XIMP=.46:TIMP=.57]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=  95.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00114-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:ST-5            .45     .071 No_date   28:00   45.54  n/a     .000
                out <=    1.0 01:ST5STR          .45     .040 No_date   28:07   45.54  n/a     .000
           overflow <=    1.0 03:ST5OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.2455E-02  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00115-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:DRAIN3       350.31    5.293 No_date   29:13   25.77  n/a     .000
                   +      1.0 02:D3             2.51     .095 No_date   28:43   40.67  n/a     .000
                   +      1.0 02:C1-STR         3.41     .159 No_date   28:23   58.43  n/a     .000
                   +      1.0 02:C1-OVF          .00     .000 No_date    0:00     .00  n/a     .000
                   +      1.0 02:ST5STR          .45     .040 No_date   28:07   45.54  n/a     .000
                   +      1.0 02:ST5OVF          .00     .000 No_date    0:00     .00  n/a     .000
                SUM=      1.0 01:ST5-E        356.68    5.480 No_date   29:11   26.21  n/a     .000
R0025:C00116-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:STRAND         7.59     .918 No_date   28:10   57.02 .767     .000
      [XIMP=.64:TIMP=.85]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1230.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00117-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:STRAND         7.59     .918 No_date   28:10   57.02  n/a     .000
                out <=    1.0 01:S-POND         7.59     .109 No_date   29:19   57.02  n/a     .000
           overflow <=    1.0 03:S-OVF           .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.2915E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00118-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:ST5-E        356.68    5.480 No_date   29:11   26.21  n/a     .000
                   +      1.0 02:S-POND         7.59     .109 No_date   29:19   57.02  n/a     .000
                   +      1.0 02:S-OVF           .00     .000 No_date    0:00     .00  n/a     .000
                SUM=      1.0 01:SSAOUT       364.27    5.589 No_date   29:11   26.85  n/a     .000
R0025:C00119-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SSAOUT       364.27    5.589 No_date   29:11   26.85  n/a     .000
      fname :SSAOUT.0025
      remark:SSAOUT
R0025:C00120-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:Area-A        66.75    7.879 No_date   28:09   56.06 .754     .000
      [XIMP=.64:TIMP=.80]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1155.:MNI=.013:SCI=   .0]
```

```
        [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00121------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:Area-A        66.75    7.879 No_date   28:09   56.06  n/a     .000
      fname :Area-A.0025
      remark:SMWF-A Inflow
R0025:C00122------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:Area-A        66.75    7.879 No_date   28:09   56.06  n/a     .000
                out <=    1.0 01:SWMF-A        66.75     .788 No_date   29:28   56.05  n/a     .000
           overflow <=    1.0 03:SWMAOV          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.2643E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00123------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SWMF-A        66.75     .788 No_date   29:28   56.05  n/a     .000
      fname :SWMF-A.0025
      remark:SMWF-A Outflow
R0025:C00124------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:SSAOUT       364.27    5.589 No_date   29:11   26.85  n/a     .000
                     +    1.0 02:SWMF-A        66.75     .788 No_date   29:28   56.05  n/a     .000
                     +    1.0 02:SWMAOV          .00     .000 No_date    0:00     .00  n/a     .000
                  SUM=    1.0 01:PT4ST5       431.02    6.356 No_date   29:13   31.37  n/a     .000
R0025:C00125------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:C6             1.87     .354 No_date   28:01   58.43 .785     .000
      [XIMP=.68:TIMP=.85]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 193.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00126------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:C6             1.87     .354 No_date   28:01   58.43  n/a     .000
                out <=    1.0 01:C6-STR         1.87     .089 No_date   28:21   58.43  n/a     .000
           overflow <=    1.0 03:C6-OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.5013E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00127------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:C7             1.62     .309 No_date   28:01   58.43 .785     .000
      [XIMP=.68:TIMP=.85]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 180.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00128------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:C7             1.62     .309 No_date   28:01   58.43  n/a     .000
                out <=    1.0 01:C7-STR         1.62     .077 No_date   28:21   58.43  n/a     .000
           overflow <=    1.0 03:C7-OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.4331E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00129------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:ST-6            .41     .065 No_date   28:00   45.54 .612     .000
      [XIMP=.46:TIMP=.57]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=  91.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00130------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:ST-6            .41     .065 No_date   28:00   45.54  n/a     .000
                out <=    1.0 01:ST6STR          .41     .036 No_date   28:07   45.54  n/a     .000
           overflow <=    1.0 03:ST6OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.2350E-02  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00131------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:PT4ST5       431.02    6.356 No_date   29:13   31.37  n/a     .000
                     +    1.0 02:C6-STR         1.87     .089 No_date   28:21   58.43  n/a     .000
                     +    1.0 02:C6-OVF          .00     .000 No_date    0:00     .00  n/a     .000
                     +    1.0 02:C7-STR         1.62     .077 No_date   28:21   58.43  n/a     .000
                     +    1.0 02:C7-OVF          .00     .000 No_date    0:00     .00  n/a     .000
                     +    1.0 02:ST6STR          .41     .036 No_date   28:07   45.54  n/a     .000
                     +    1.0 02:ST6OVF          .00     .000 No_date    0:00     .00  n/a     .000
                  SUM=    1.0 01:PT5ST6       434.92    6.464 No_date   29:12   31.60  n/a     .000
R0025:C00132------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:PT5ST6       434.92    6.464 No_date   29:12   31.60  n/a     .000
     [RDT= 1.00] out<-    1.0 01:DRAIN4       434.92    6.229 No_date   29:21   31.60  n/a     .000
      [L/S/n=  324./ .100/.043]
      {Vmax=  .475:Dmax= 1.440}
R0025:C00133------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:D4             1.73     .082 No_date   28:34   43.34 .583     .000
      [CN= 88.0: N= 3.00: Tp=  .60]
      [IaREC= 4.00: SMIN= 14.94: SMAX= 99.61: SK= .010]
      [InterEventTime=  12.00]
R0025:C00134------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:Area-B        24.04    3.916 No_date   28:03   54.85 .737     .000
      [XIMP=.62:TIMP=.77]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=1.40:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.40:LGI= 693.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00135------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:Area-B        24.04    3.916 No_date   28:03   54.85  n/a     .000
                out <=    1.0 01:SWMF-B        24.04     .492 No_date   28:44   54.85  n/a     .000
           overflow <=    1.0 03:SWMBOVF         .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.8178E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00136------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:DRAIN4       434.92    6.229 No_date   29:21   31.60  n/a     .000
                     +    1.0 02:D4             1.73     .082 No_date   28:34   43.34  n/a     .000
                     +    1.0 02:SWMF-B        24.04     .492 No_date   28:44   54.85  n/a     .000
                     +    1.0 02:SWMBOVF         .00     .000 No_date    0:00     .00  n/a     .000
                  SUM=    1.0 01:D4-EX        460.69    6.717 No_date   29:21   32.86  n/a     .000
R0025:C00137------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:D4-EX        460.69    6.717 No_date   29:21   32.86  n/a     .000
     [RDT= 1.00] out<-    1.0 01:DRAIN5       460.69    6.598 No_date   29:35   32.86  n/a     .000
      [L/S/n=  413./ .160/.033]
      {Vmax=  .641:Dmax=  .984}
R0025:C00138------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:D5             1.90     .075 No_date   28:41   40.67 .547     .000
      [CN= 86.0: N= 3.00: Tp=  .69]
      [IaREC= 4.00: SMIN= 17.43: SMAX=116.21: SK= .010]
      [InterEventTime=  12.00]
R0025:C00139------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:O-13SDF        9.74     .487 No_date   28:22   38.23 .514     .000
      [CN= 81.0: N= 3.00: Tp=  .43]
      [IaREC= 4.00: SMIN= 25.21: SMAX=168.09: SK= .010]
      [InterEventTime=  12.00]
R0025:C00140------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:O-13SDF        9.74     .487 No_date   28:22   38.23  n/a     .000
                out <=    1.0 01:SDF            9.74     .052 No_date   31:01   38.23  n/a     .000
           overflow <=    1.0 03:OVFSDF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.2061E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00141------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:DRAIN5       460.69    6.598 No_date   29:35   32.86  n/a     .000
                     +    1.0 02:D5             1.90     .075 No_date   28:41   40.67  n/a     .000
                     +    1.0 02:SDF            9.74     .052 No_date   31:01   38.23  n/a     .000
                  SUM=    1.0 01:PT6MC        472.33    6.689 No_date   29:35   33.00  n/a     .000
R0025:C00142------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:O-15          10.67     .668 No_date   28:13   37.06 .498     .000
      [CN= 82.0: N= 3.00: Tp=  .30]
      [IaREC= 4.00: SMIN= 23.09: SMAX=153.94: SK= .010]
      [InterEventTime=  12.00]
R0025:C00143------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:PT6MC        472.33    6.689 No_date   29:35   33.00  n/a     .000
                     +    1.0 02:O-15          10.67     .668 No_date   28:13   37.06  n/a     .000
                  SUM=    1.0 01:M-C          483.00    6.790 No_date   29:34   33.09  n/a     .000
R0025:C00144------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:M-C          483.00    6.790 No_date   29:34   33.09  n/a     .000
     [RDT= 1.00] out<-    1.0 01:O-14Ch       483.00    6.173 No_date   30:10   33.09  n/a     .000
      [L/S/n=  845./ .100/.033]
      {Vmax=  .552:Dmax= 1.692}
R0025:C00145------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:O-14           5.00     .516 No_date   28:04   37.06 .498     .000
      [CN= 82.0: N= 3.00: Tp=  .13]
      [IaREC= 4.00: SMIN= 23.09: SMAX=153.94: SK= .010]
      [InterEventTime=  12.00]
R0025:C00146------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:O-14Ch       483.00    6.173 No_date   30:10   33.09  n/a     .000
                     +    1.0 02:O-14           5.00     .516 No_date   28:04   37.06  n/a     .000
                  SUM=    1.0 01:OKEEFE       488.00    6.203 No_date   30:09   33.13  n/a     .000
#****************************************************************************
#    Okeefe Pond
#    - Rating curve obtained assuming 40m3/ha in 24 hours for quality control
#      and a ratio of the catchment area to the West Clarke pond rating curve
#      from the MSS for the next coordinates
#****************************************************************************
R0025:C00147------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-D2        18.67    2.960 No_date   28:01   57.38 .771     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .75:LGI= 353.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0025:C00148------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:S-1-D2        18.67    2.960 No_date   28:01   57.38  n/a     .000
     Major System   /     1.0 02:S-1-D2J         .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:S-1-D2N       18.67    2.097 No_date   27:55   57.70  n/a     .000
      {MjSysSto=.4055E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00149------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:S-1-D2J         .00     .000 No_date    0:00     .00  n/a     .000
                     +    1.0 02:S-1-D2N       18.67    2.097 No_date   27:55   57.70  n/a     .000
                  SUM=    1.0 01:S-1-D2S       18.67    2.097 No_date   27:55   57.70  n/a     .000
R0025:C00150------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:S-1-D2S       18.67    2.097 No_date   27:55   57.70  n/a     .000
                out <=    1.0 01:S-1-D2R       18.67     .194 No_date   29:20   57.70  n/a     .000
           overflow <=    1.0 03:S-1-D2Rovf      .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.6483E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00151------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-D3         6.79    1.150 No_date   28:01   57.38 .771     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .75:LGI= 213.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0025:C00152------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:S-1-D3         6.79    1.150 No_date   28:01   57.38  n/a     .000
     Major System   /     1.0 02:S-1-D3J         .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:S-1-D3N        6.79     .831 No_date   27:54   57.61  n/a     .000
      {MjSysSto=.1361E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00153------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:S-1-D3J         .00     .000 No_date    0:00     .00  n/a     .000
                     +    1.0 02:S-1-D3N        6.79     .831 No_date   27:54   57.61  n/a     .000
                  SUM=    1.0 01:S-1-D3S        6.79     .831 No_date   27:54   57.61  n/a     .000
R0025:C00154------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:S-1-D3S        6.79     .831 No_date   27:54   57.61  n/a     .000
                out <=    1.0 01:S-1-D3R        6.79     .070 No_date   29:16   57.61  n/a     .000
           overflow <=    1.0 03:S-1-D3Rovf      .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.2353E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00155------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N_OK       53064.36  107.360 No_date   33:27   28.68  n/a     .000
                     +    1.0 02:OKEEFE       488.00    6.203 No_date   30:09   33.13  n/a     .000
                     +    1.0 02:S-1-D2R       18.67     .194 No_date   29:20   57.70  n/a     .000
                     +    1.0 02:S-1-D3R        6.79     .070 No_date   29:16   57.61  n/a     .000
                     +    1.0 02:S-1-D2Rovf      .00     .000 No_date    0:00     .00  n/a     .000
                     +    1.0 02:S-1-D3Rovf      .00     .000 No_date    0:00     .00  n/a     .000
                  SUM=    1.0 01:SN_OK      53577.82  109.739 No_date   33:27   28.74  n/a     .000
R0025:C00156------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_OK      53577.82  109.739 No_date   33:27   28.74  n/a     .000
      fname :SN_OK.0025
      remark:Total Flows at Okeefe Drain
#
# Hydrograph from Node Okeefe routed to Node at Foster Drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 6215
#
R0025:C00157------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_OK      53577.82  109.739 No_date   33:27   28.74  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N_FO       53577.82  109.449 No_date   33:28   28.74  n/a     .000
      [L/S/n= 1183./ .076/.035]
      {Vmax= 1.186:Dmax= 3.166}
#****************************************************************************
#    Catchment FOSTER
#    - To Foster ditch (north of the Jock)
#    - Partially developed (medium density); remaining agricultural
#    - 2020-12-01 JFSA Foster area is 332 as per Foster SWMF Environmental Study Report, CH2MHILL, Aug 2013.
#    - 2020-12-01 decrease Foster drainage area from (373 HA) to (307.98 HA) after increasing Okeefe drainage area to (5
#    - 2021-02-12  update Foster area to 325.44 ha as measured from QGIS
#****************************************************************************
R0025:C00158------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:FOSTER       325.44   28.008 No_date   28:12   52.35 .704     .000
      [XIMP=.55:TIMP=.55]
      [LOSS= 2 :CN= 74.0]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1473.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 36.67: SMAX=244.49: SK= .010]
#****************************************************************************
#    Foster Pond
#    - Rating curve obtained assuming 40m3/ha in 24 hours for quality control
#      and a ratio of the catchment area to the West Clarke pond rating curve
#      from the MSS for the next coordinates
#****************************************************************************
R0025:C00159------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:FOSTER       325.44   28.008 No_date   28:12   52.35  n/a     .000
                out <=    1.0 01:P_FOS        325.44    7.246 No_date   29:04   52.35  n/a     .000
           overflow <=    1.0 03:FO-OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.7008E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00160------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:P_FOS        325.44    7.246 No_date   29:04   52.35  n/a     .000
                     +    1.0 02:FO-OVF          .00     .000 No_date    0:00     .00  n/a     .000
                  SUM=    1.0 01:FOSTER-OUT   325.44    7.246 No_date   29:04   52.35  n/a     .000
#****************************************************************************
R0025:C00161------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:W_CLAR_BRA    73.29    9.076 No_date   28:05   56.82 .764     .000
      [XIMP=.60:TIMP=.65]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 699.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0025:C00162------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:W_CLAR_BRA    73.29    9.076 No_date   28:05   56.82  n/a     .000
                out <=    1.0 01:MS_P10        73.29    1.168 No_date   29:06   56.82  n/a     .000
           overflow <=    1.0 03:P10-OVF         .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.1685E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00163------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-FO-D2      4.94     .707 No_date   28:01   52.35 .704     .000
      [XIMP=.55:TIMP=.55]
      [LOSS= 2 :CN= 74.0]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 181.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 36.67: SMAX=244.49: SK= .010]
R0025:C00164------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:S-1-FO-D2      4.94     .707 No_date   28:01   52.35  n/a     .000
     Major System   /     1.0 02:S-1-FO-D2J      .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:S-1-FO-D2N     4.94     .508 No_date   28:14   52.51  n/a     .000
      {MjSysSto=.8671E+02, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00165------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:S-1-FO-D2J      .00     .000 No_date    0:00     .00  n/a     .000
                     +    1.0 02:S-1-FO-D2N     4.94     .508 No_date   28:14   52.51  n/a     .000
                  SUM=    1.0 01:S-1-FO-D2S     4.94     .508 No_date   28:14   52.51  n/a     .000
R0025:C00166------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:S-1-FO-D2S     4.94     .508 No_date   28:14   52.51  n/a     .000
                out <=    1.0 01:S-1-FO-D2R     4.94     .046 No_date   29:33   52.50  n/a     .000
           overflow <=    1.0 03:S-1FOD2ovf      .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.1543E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00167------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:FOSTER-OUT   325.44    7.246 No_date   29:04   52.35  n/a     .000
                     +    1.0 02:S-1-FO-D2R     4.94     .046 No_date   29:33   52.50  n/a     .000
                     +    1.0 02:S-1FOD2ovf      .00     .000 No_date    0:00     .00  n/a     .000
                  SUM=    1.0 01:980          330.38    7.292 No_date   29:04   52.35  n/a     .000
R0025:C00168------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:980          330.38    7.292 No_date   29:04   52.35  n/a     .000
      fname :980.0025
      remark:Total Flows at Station 980 on Foster Drain
#
# Hydrograph from Node Foster SWM (Station 980)to Node at station 520
# Channel X-Section obtained from RVCA Hydraulic Model - Station 980
#
R0025:C00169------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:980          330.38    7.292 No_date   29:04   52.35  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:980-out      330.38    7.051 No_date   29:15   52.35  n/a     .000
      [L/S/n=  460./ .043/.035]
      {Vmax=  .642:Dmax= 1.516}
R0025:C00170------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-FO-D1      5.11     .830 No_date   28:00   56.90 .765     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 74.0]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 185.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 36.67: SMAX=244.49: SK= .010]
R0025:C00171------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:S-1-FO-D1      5.11     .830 No_date   28:00   56.90  n/a     .000
     Major System   /     1.0 02:S-1-FO-D1J      .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:S-1-FO-D1N     5.11     .605 No_date   28:13   57.24  n/a     .000
      {MjSysSto=.9506E+02, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00172------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:S-1-FO-D1N     5.11     .605 No_date   27:54   57.24  n/a     .000
                     +    1.0 02:S-1-FO-D1J      .00     .000 No_date    0:00     .00  n/a     .000
                  SUM=    1.0 01:S-1-FO-D1S     5.11     .605 No_date   27:54   57.24  n/a     .000
R0025:C00173------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:S-1-FO-D1S     5.11     .605 No_date   27:54   57.24  n/a     .000
                out <=    1.0 01:S-1-FO-D1R     5.11     .053 No_date   29:23   57.24  n/a     .000
           overflow <=    1.0 03:S-1FOD1ovf      .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.1756E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00174------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:980-out      330.38    7.051 No_date   29:15   52.35  n/a     .000
                     +    1.0 02:S-1-FO-D1R     5.11     .053 No_date   29:23   57.24  n/a     .000
                     +    1.0 02:S-1FOD1ovf      .00     .000 No_date    0:00     .00  n/a     .000
                  SUM=    1.0 01:520          335.49    7.103 No_date   29:15   52.43  n/a     .000
R0025:C00175------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:520          335.49    7.103 No_date   29:15   52.43  n/a     .000
      fname :520.0025
      remark:Total Flows at Sation 520 on Foster Drain
# Hydrograph from Node at Station 520 (Foster Drain) to Node at station 6016 (Jock River)
# Channel X-Section obtained from RVCA Hydraulic Model - Station 520
#
R0025:C00176------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:520          335.49    7.103 No_date   29:15   52.43  n/a     .000
     [RDT= 1.00] out<-    1.0 01:520-out      335.49    7.032 No_date   29:23   52.43  n/a     .000
      [L/S/n=  860./ .587/.035]
      {Vmax= 1.474:Dmax=  .723}
R0025:C00177------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-FO-F-D    14.96    2.238 No_date   28:02   56.90 .765     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 74.0]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 316.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 36.67: SMAX=244.49: SK= .010]
R0025:C00178------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:S-1-FO-F-D    14.96    2.238 No_date   28:02   56.90  n/a     .000
     Major System   /     1.0 02:S-1FO-F-DJ      .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:S-1FO-F-DN    14.96    1.615 No_date   27:55   56.95  n/a     .000
      {MjSysSto=.2999E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00179------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:S-1FO-F-DJ      .00     .000 No_date    0:00     .00  n/a     .000
                     +    1.0 02:S-1FO-F-DN    14.96    1.615 No_date   27:55   56.95  n/a     .000
                  SUM=    1.0 01:S-1FO-F-DS    14.96    1.615 No_date   27:55   56.95  n/a     .000
R0025:C00180------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:S-1FO-F-DS    14.96    1.615 No_date   27:55   56.95  n/a     .000
                out <=    1.0 01:S-1FO-F-DR    14.96     .153 No_date   29:30   56.95  n/a     .000
           overflow <=    1.0 03:S-1FoFDovf      .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.5104E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00181------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-D8         5.27     .945 No_date   28:01   42.02 .565     .000
      [XIMP=.32:TIMP=.65]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI= .75:LGI= 187.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00182------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:S-1-D8         5.27     .945 No_date   28:01   42.02  n/a     .000
     Major System   /     1.0 02:S-1-D8J         .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:S-1-D8N        5.27     .672 No_date   27:55   42.30  n/a     .000
      {MjSysSto=.1242E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00183------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:S-1-D8J         .00     .000 No_date    0:00     .00  n/a     .000
                     +    1.0 02:S-1-D8N        5.27     .672 No_date   27:55   42.30  n/a     .000
                  SUM=    1.0 01:S-1-D8S        5.27     .672 No_date   27:55   42.30  n/a     .000
R0025:C00184------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
```

```
    ROUTE RESERVOIR ->    1.0 02:S-1-D8S        5.27     .672 No_date   27:55   42.30  n/a     .000
                out <=    1.0 01:S-1-D8R        5.27     .050 No_date   28:47   42.30  n/a     .000
           overflow <=    1.0 03:S-1-D8Rovf      .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.1658E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00185------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:S-1-A         75.88    2.541 No_date   28:36   34.14 .459     .000
      [CN= 77.0: N= 3.00: Tp=  .62]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0025:C00186------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:W_CLAR_UND    35.65     .789 No_date   29:10   34.14 .459     .000
      [CN= 77.0: N= 3.00: Tp= 1.10]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0025:C00187------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N_FO       53577.82  109.449 No_date   33:28   28.74  n/a     .000
                     +    1.0 02:520-out      335.49    7.032 No_date   29:23   52.43  n/a     .000
                     +    1.0 02:MS_P10        73.29    1.168 No_date   29:06   56.82  n/a     .000
                     +    1.0 02:P10-OVF         .00     .000 No_date    0:00     .00  n/a     .000
                     +    1.0 02:W_CLAR_UND    35.65     .789 No_date   29:10   34.14  n/a     .000
                     +    1.0 02:S-1FoFDovf      .00     .000 No_date    0:00     .00  n/a     .000
                     +    1.0 02:S-1FO-F-DR    14.96     .153 No_date   29:30   56.95  n/a     .000
                     +    1.0 02:S-1-D8Rovf      .00     .000 No_date    0:00     .00  n/a     .000
                     +    1.0 02:S-1-D8R        5.27     .050 No_date   28:47   42.30  n/a     .000
                     +    1.0 02:S-1-A         75.88    2.541 No_date   28:36   34.14  n/a     .000
                  SUM=    1.0 01:SN_FO      54118.36  114.198 No_date   33:27   28.94  n/a     .000
R0025:C00188------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_FO      54118.36  114.198 No_date   33:27   28.94  n/a     .000
      fname :SN_FO.0025
      remark:Total Flows at Foster Drain
# Hydrograph from Node Foster routed to Node at Cedarview Road
# Channel X-Section obtained from RVCA Hydraulic Model - Station 6016
#
R0025:C00189------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_FO      54118.36  114.198 No_date   33:27   28.94  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:N_CE       54118.36  114.014 No_date   33:32   28.94  n/a     .000
      [L/S/n=  159./ .082/.035]
      {Vmax= 1.425:Dmax= 3.814}
#***************************************************************************
#    Catchment S-1
#    - To Jock River (north and south of Jock)
#    - Primarily agricultural fields; portion of sand quarry
#***************************************************************************
R0025:C00190------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:S-1-B         55.36    2.311 No_date   28:23   34.14 .459     .000
      [CN= 77.0: N= 3.00: Tp=  .45]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
#    -  JFSA 2021-02-24 change the name from S-1-BCDC to S-1-A and S-1-B. Change their TP values based on the new areas
#    -  JFSA 2021-02-24 "S-1-BCDC-1" and "S-1-BCDC-2" are not existing anymore. "S-1-BCDC-1" is part of "S-1-FO-D2" and
#    -  JFSA 2021-01-19, after adding Greenbank pond, "S-1-BCDC-3" is not existing anymore
R0025:C00191------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-D1        21.67    3.385 No_date   28:01   57.38 .771     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .75:LGI= 380.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0025:C00192------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:S-1-D1        21.67    3.385 No_date   28:01   57.38  n/a     .000
     Major System   /     1.0 02:S-1-D1J         .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:S-1-D1N       21.67    2.409 No_date   27:55   57.58  n/a     .000
      {MjSysSto=.4594E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00193------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:S-1-D1J         .00     .000 No_date    0:00     .00  n/a     .000
                     +    1.0 02:S-1-D1N       21.67    2.409 No_date   27:55   57.58  n/a     .000
                  SUM=    1.0 01:S-1-D1S       21.67    2.409 No_date   27:55   57.58  n/a     .000
R0025:C00194------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:S-1-D1S       21.67    2.409 No_date   27:55   57.58  n/a     .000
                out <=    1.0 01:S-1-D1R       21.67     .225 No_date   29:22   57.58  n/a     .000
           overflow <=    1.0 03:S-1-D1Rovf      .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.7499E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00195------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-D4         3.28     .581 No_date   28:00   57.38 .771     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .75:LGI= 148.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0025:C00196------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:S-1-D4         3.28     .581 No_date   28:00   57.38  n/a     .000
     Major System   /     1.0 02:S-1-D4J         .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:S-1-D4N        3.28     .421 No_date   27:54   57.72  n/a     .000
      {MjSysSto=.6427E+02, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00197------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:S-1-D4J         .00     .000 No_date    0:00     .00  n/a     .000
                     +    1.0 02:S-1-D4N        3.28     .421 No_date   27:54   57.72  n/a     .000
                  SUM=    1.0 01:S-1-D4S        3.28     .421 No_date   27:54   57.72  n/a     .000
R0025:C00198------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:S-1-D4S        3.28     .421 No_date   27:54   57.72  n/a     .000
                out <=    1.0 01:S-1-D4R        3.28     .034 No_date   29:13   57.71  n/a     .000
           overflow <=    1.0 03:S-1-D4Rovf      .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.1140E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00199------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-D5        12.84    2.083 No_date   28:01   57.38 .771     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .75:LGI= 293.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0025:C00200------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:S-1-D5        12.84    2.083 No_date   28:01   57.38  n/a     .000
     Major System   /     1.0 02:S-1-D5J         .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:S-1-D5N       12.84    1.500 No_date   27:55   57.52  n/a     .000
      {MjSysSto=.2624E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00201------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:S-1-D5J         .00     .000 No_date    0:00     .00  n/a     .000
                     +    1.0 02:S-1-D5N       12.84    1.500 No_date   27:55   57.52  n/a     .000
                  SUM=    1.0 01:S-1-D5S       12.84    1.500 No_date   27:55   57.52  n/a     .000
R0025:C00202------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:S-1-D5S       12.84    1.500 No_date   27:55   57.52  n/a     .000
                out <=    1.0 01:S-1-D5R       12.84     .133 No_date   29:19   57.52  n/a     .000
           overflow <=    1.0 03:S-1-D5Rovf      .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.4437E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00203------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-D6         1.75     .319 No_date   28:00   57.38 .771     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .75:LGI= 108.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0025:C00204------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:S-1-D6         1.75     .319 No_date   28:00   57.38  n/a     .000
     Major System   /     1.0 02:S-1-D6J         .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:S-1-D6N        1.75     .232 No_date   27:53   57.55  n/a     .000
      {MjSysSto=.3427E+02, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00205------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:S-1-D6J         .00     .000 No_date    0:00     .00  n/a     .000
                     +    1.0 02:S-1-D6N        1.75     .232 No_date   27:53   57.55  n/a     .000
                  SUM=    1.0 01:S-1-D6S        1.75     .232 No_date   27:53   57.55  n/a     .000
R0025:C00206------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:S-1-D6S        1.75     .232 No_date   27:53   57.55  n/a     .000
                out <=    1.0 01:S-1-D6R        1.75     .018 No_date   29:12   57.55  n/a     .000
           overflow <=    1.0 03:S-1-D6Rovf      .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.6057E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00207------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-D7         2.03     .369 No_date   28:00   57.38 .771     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .75:LGI= 116.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0025:C00208------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:S-1-D7         2.03     .369 No_date   28:00   57.38  n/a     .000
     Major System   /     1.0 02:S-1-D7J         .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:S-1-D7N        2.03     .265 No_date   27:53   57.80  n/a     .000
      {MjSysSto=.4131E+02, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00209------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:S-1-D7J         .00     .000 No_date    0:00     .00  n/a     .000
                     +    1.0 02:S-1-D7N        2.03     .265 No_date   27:53   57.80  n/a     .000
                  SUM=    1.0 01:S-1-D7S        2.03     .265 No_date   27:53   57.80  n/a     .000
R0025:C00210------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:S-1-D7S        2.03     .265 No_date   27:53   57.80  n/a     .000
                out <=    1.0 01:S-1-D7R        2.03     .021 No_date   29:11   57.80  n/a     .000
           overflow <=    1.0 03:S-1-D7Rovf      .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.7068E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
#    Catchment W_CLAR
#    - To West Clarke Drain (south of the Jock)
#    - Subdivision with 43% imp. as per Barrhaven South MSS
#    - 2020-11-30 update CLARKE Tributary Drainage Area to  = 121 ha based on P598(04)-11
#    - 2020-11-30 split CLARKE Drainage Area to MAJOR and ALL
#***************************************************************************
R0025:C00211------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:W_CLAR_MJ      1.77     .279 No_date   28:00   52.78 .709     .000
      [XIMP=.46:TIMP=.59]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 109.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
# 5-Year + 12% Capture
R0025:C00212------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:W_CLAR_MJ      1.77     .279 No_date   28:00   52.78  n/a     .000
                out <=    1.0 01:W_CLAR_MJn     1.73     .213 No_date   27:54   52.78  n/a     .000
           overflow <=    1.0 03:W_CLAR_MJj      .04     .062 No_date   28:01   52.78  n/a     .000
     {MxStoUsed=.1173E-03  m3, TotOvfVol=.2205E-02  m3, N-Ovf=    1, TotDurOvf=    0.hrs}
R0025:C00213------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:W_CLAR_ALL   119.40   15.305 No_date   28:04   56.82 .764     .000
      [XIMP=.60:TIMP=.65]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 892.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0025:C00214------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:W_CLAR_ALL   119.40   15.305 No_date   28:04   56.82  n/a     .000
                     +    1.0 02:W_CLAR_MJj      .04     .062 No_date   28:01   52.78  n/a     .000
                  SUM=    1.0 01:W_CLAR       119.44   15.305 No_date   28:04   56.81  n/a     .000
R0025:C00215------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:W_CLAR       119.44   15.305 No_date   28:04   56.81  n/a     .000
      fname :W_CLAR.0025
      remark:Total Flows to West Clarke
#***************************************************************************
#    West Clarke Pond 2
#    - Rating curve obtained from Barrhaven South MSS modeling
#    - Tributary Drainage Area to MSS Pond 2 = 241 ha
#***************************************************************************
R0025:C00216------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:W_CLAR       119.44   15.305 No_date   28:04   56.81  n/a     .000
                out <=    1.0 01:MS_P2        119.44    7.398 No_date   28:20   56.81  n/a     .000
           overflow <=    1.0 03:P2-OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.2962E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
#***************************************************************************
R0025:C00217------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N_CE       54118.36  114.014 No_date   33:32   28.94  n/a     .000
                     +    1.0 02:S-1-D4R        3.28     .034 No_date   29:13   57.71  n/a     .000
                     +    1.0 02:S-1-D5R       12.84     .133 No_date   29:19   57.52  n/a     .000
                     +    1.0 02:S-1-D4Rovf      .00     .000 No_date    0:00     .00  n/a     .000
                     +    1.0 02:S-1-D5Rovf      .00     .000 No_date    0:00     .00  n/a     .000
                     +    1.0 02:MS_P2        119.44    7.398 No_date   28:20   56.81  n/a     .000
                     +    1.0 02:P2-OVF          .00     .000 No_date    0:00     .00  n/a     .000
                  SUM=    1.0 01:SN_CE      54253.92  114.982 No_date   33:32   29.01  n/a     .000
R0025:C00218------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_CE      54253.92  114.982 No_date   33:32   29.01  n/a     .000
      fname :SN_CE.0025
      remark:Total Flows before Station 5737 on Jock River
# Channel X-Section obtained from RVCA Hydraulic Model - Station 5737
# 2021-02-25 add station 5737 before station 5002. Station 5737 was extracted from the HEC-RAS model T:\PROJ\1474-16\Des
# JFSA 2021-03-02  change the slope to 0.0175% instead of 0.02593 to stabilize the model
R0025:C00219------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_CE      54253.92  114.982 No_date   33:32   29.01  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:5737       54253.92  108.094 No_date   36:08   29.01  n/a     .000
      [L/S/n=  270./ .018/.035]
      {Vmax=  .784:Dmax= 4.985}
R0025:C00220------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:5737       54253.92  108.094 No_date   36:08   29.01  n/a     .000
                     +    1.0 02:S-1-D1R       21.67     .225 No_date   29:22   57.58  n/a     .000
                     +    1.0 02:S-1-D6R        1.75     .018 No_date   29:12   57.55  n/a     .000
                     +    1.0 02:S-1-D7R        2.03     .021 No_date   29:11   57.80  n/a     .000
                     +    1.0 02:S-1-D1Rovf      .00     .000 No_date    0:00     .00  n/a     .000
                     +    1.0 02:S-1-D6Rovf      .00     .000 No_date    0:00     .00  n/a     .000
                     +    1.0 02:S-1-D7Rovf      .00     .000 No_date    0:00     .00  n/a     .000
                  SUM=    1.0 01:5002       54279.37  108.278 No_date   36:07   29.03  n/a     .000
R0025:C00221------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:5002       54279.37  108.278 No_date   36:07   29.03  n/a     .000
      fname :5002.0025
      remark:Total Flows before Station 5002 on Jock River
# Hydrograph from Node Cedarview Road routed to Node at West Clarke Drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 5002
# JFSA 2021-02-19 Change the slope from 0.01 % (as per Stantec Report 2007) to 0.0255 % so the model will be more stable
# JFSA 2021-02-19 Change to three ROUTE CHANNEL with length 275 m each instead of one with 825 m length so the model wil
# JFSA 2021-02-26 change the length of 5002 route channel from 825 m to 736 m. That is because of adding station 5737 be
R0025:C00222------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:5002       54279.37  108.278 No_date   36:07   29.03  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:N_WCa      54279.37  108.230 No_date   36:18   29.03  n/a     .000
      [L/S/n=  245./ .095/.035]
      {Vmax= 1.212:Dmax= 2.784}
R0025:C00223------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:N_WCa      54279.37  108.230 No_date   36:18   29.03  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:N_WCb      54279.37  108.213 No_date   36:26   29.03  n/a     .000
      [L/S/n=  245./ .095/.035]
      {Vmax= 1.212:Dmax= 2.783}
R0025:C00224------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:N_WCb      54279.37  108.213 No_date   36:26   29.03  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:N_WC       54279.37  108.189 No_date   36:34   29.03  n/a     .000
      [L/S/n=  245./ .095/.035]
      {Vmax= 1.212:Dmax= 2.783}
#***************************************************************************
# Hydrograph from Node West Clarke routed to Node at Kennedy - Burnett Drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 4534
#
R0025:C00225------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:N_WC       54279.37  108.189 No_date   36:34   29.03  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:N_KB       54279.37  103.026 No_date   38:57   29.03  n/a     .000
      [L/S/n= 1020./ .050/.035]
      {Vmax= 1.074:Dmax= 3.491}
#***************************************************************************
#    Catchment KEN_BU
#    - To Kennedy-Burnett SWM Facility
#    - Outlets to Fraser-Clarke drain (north of the Jock)
#    - Medium density residential subdivision
#***************************************************************************
#***************************************************************************
#   Existing Kennedy-Burnett SWM Facility
#    - Rating curve obtained from URTKBP
#    - Tributary Drainage Area to Pond = 160 ha
#***************************************************************************
R0025:C00226------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-01A        40.82    4.186 No_date   28:11   29.35 .395     .000
      [XIMP=.10:TIMP=.40]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI= .50:LGI= 522.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00227------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-01A        40.82    4.186 No_date   28:11   29.35  n/a     .000
     Major System   /     1.0 02:KB-01A-MJ       .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-01A-MN     40.82    3.600 No_date   28:03   29.50  n/a     .000
      {MjSysSto=.3786E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00228------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-01A-MJ       .00     .000 No_date    0:00     .00  n/a     .000
                     +    1.0 02:KB-01A-MN     40.82    3.600 No_date   28:03   29.50  n/a     .000
                  SUM=    1.0 01:KB-01A-S      40.82    3.600 No_date   28:03   29.50  n/a     .000
R0025:C00229------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-01B        31.10    3.068 No_date   28:07   32.30 .434     .000
      [XIMP=.19:TIMP=.38]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .42:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI= .42:LGI= 455.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00230------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-01B        31.10    3.068 No_date   28:07   32.30  n/a     .000
     Major System   /     1.0 02:KB-01B-MJ       .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-01B-MN     31.10    1.585 No_date   27:55   32.52  n/a     .000
      {MjSysSto=.1849E+04, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00231------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-01B-MJ       .00     .000 No_date    0:00     .00  n/a     .000
                     +    1.0 02:KB-01B-MN     31.10    1.585 No_date   27:55   32.52  n/a     .000
                  SUM=    1.0 01:KB-01B-S      31.10    1.585 No_date   27:55   32.52  n/a     .000
R0025:C00232------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-01C        13.78    1.868 No_date   28:04   33.51 .450     .000
      [XIMP=.20:TIMP=.41]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI= .50:LGI= 303.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00233------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-01C        13.78    1.868 No_date   28:04   33.51  n/a     .000
     Major System   /     1.0 02:KB-01C-MJ       .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-01C-MN     13.78    1.350 No_date   27:57   33.69  n/a     .000
      {MjSysSto=.3173E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00234------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-01C-MJ       .00     .000 No_date    0:00     .00  n/a     .000
                     +    1.0 02:KB-01C-MN     13.78    1.350 No_date   27:57   33.69  n/a     .000
                  SUM=    1.0 01:KB-01C-S      13.78    1.350 No_date   27:57   33.69  n/a     .000
R0025:C00235------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-03         84.78    9.657 No_date   28:08   32.97 .443     .000
      [XIMP=.20:TIMP=.39]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI= .63:LGI= 752.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00236------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-03         84.78    9.657 No_date   28:08   32.97  n/a     .000
     Major System   /     1.0 02:KB-03-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-03-MN      84.78    5.270 No_date   27:56   33.21  n/a     .000
      {MjSysSto=.4456E+04, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00237------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-03-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                     +    1.0 02:KB-03-MN      84.78    5.270 No_date   27:56   33.21  n/a     .000
                  SUM=    1.0 01:KB-03-S       84.78    5.270 No_date   27:56   33.21  n/a     .000
R0025:C00238------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-04          6.95    1.434 No_date   28:00   65.29 .878     .000
      [XIMP=.85:TIMP=.85]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .94:SLPI= .50:LGI= 215.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00239------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-04          6.95    1.434 No_date   28:00   65.29  n/a     .000
     Major System   /     1.0 02:KB-04-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-04-MN       6.95     .503 No_date   27:45   65.54  n/a     .000
      {MjSysSto=.7689E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00240------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-04-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                     +    1.0 02:KB-04-MN       6.95     .503 No_date   27:45   65.54  n/a     .000
                  SUM=    1.0 01:KB-04-S        6.95     .503 No_date   27:45   65.54  n/a     .000
R0025:C00241------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-05          5.19    1.147 No_date   28:00   69.06 .928     .000
      [XIMP=.93:TIMP=.93]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 186.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00242------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-06         12.93    2.960 No_date   28:00   66.54 .895     .000
      [XIMP=.87:TIMP=.87]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
```

```
      [Impervious   area: IAimp=  .94:SLPI=4.75:LGI= 294.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00243------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-06          12.93    2.960 No_date   28:00   66.54  n/a     .000
     Major System   /     1.0 02:KB-06-MJ         .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-06-MN       12.93    2.262 No_date   28:07   66.58  n/a     .000
      {MjSysSto=.2613E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00244------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-06-MJ         .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:KB-06-MN       12.93    2.262 No_date   28:07   66.58  n/a     .000
                 SUM=     1.0 01:KB-06-S        12.93    2.262 No_date   28:07   66.58  n/a     .000
R0025:C00245------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-11           4.03     .817 No_date   28:00   55.88 .751     .000
      [XIMP=.68:TIMP=.68]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI=2.00:LGI= 164.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00246------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-11           4.03     .817 No_date   28:00   55.88  n/a     .000
     Major System   /     1.0 02:KB-11-MJ         .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-11-MN        4.03     .577 No_date   27:53   55.96  n/a     .000
      {MjSysSto=.9558E+02, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00247------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-11-MJ         .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:KB-11-MN        4.03     .577 No_date   27:53   55.96  n/a     .000
                 SUM=     1.0 01:KB-11-S         4.03     .577 No_date   27:53   55.96  n/a     .000
R0025:C00248------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S1              4.99    1.184 No_date   28:00   69.06 .928     .000
      [XIMP=.93:TIMP=.93]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=2.00:LGI= 182.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00249------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-15           2.15     .447 No_date   28:00   62.65 .842     .000
      [XIMP=.79:TIMP=.79]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .16:SLPI= .30:LGI= 120.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00250------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-01A-S       40.82    3.600 No_date   28:03   29.50  n/a     .000
                    +     1.0 02:KB-01B-S       31.10    1.585 No_date   27:55   32.52  n/a     .000
                    +     1.0 02:KB-01C-S       13.78    1.350 No_date   27:57   33.69  n/a     .000
                    +     1.0 02:KB-03-S        84.78    5.270 No_date   27:56   33.21  n/a     .000
                    +     1.0 02:KB-04-S         6.95     .503 No_date   27:45   65.54  n/a     .000
                    +     1.0 02:KB-05           5.19    1.147 No_date   28:00   69.06  n/a     .000
                    +     1.0 02:KB-06-S        12.93    2.262 No_date   28:07   66.58  n/a     .000
                    +     1.0 02:KB-11-S         4.03     .577 No_date   27:53   55.96  n/a     .000
                    +     1.0 02:KB-15           2.15     .447 No_date   28:00   62.65  n/a     .000
                    +     1.0 02:S1              4.99    1.184 No_date   28:00   69.06  n/a     .000
                 SUM=     1.0 01:KB-P1         206.72   17.555 No_date   28:01   38.09  n/a     .000
R0025:C00251------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:KB-P1         206.72   17.555 No_date   28:01   38.09  n/a     .000
                out <=    1.0 01:KB-P1R        201.26   12.438 No_date   28:05   38.09  n/a     .000
           overflow <=    1.0 03:KB-P1ovf        5.46    4.400 No_date   28:05   38.09  n/a     .000
     {MxStoUsed=.7322E+00  m3, TotOvfVol=.2079E+00  m3, N-Ovf=    1, TotDurOvf=    0.hrs}
R0025:C00252------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-P1R        201.26   12.438 No_date   28:05   38.09  n/a     .000
                    +     1.0 02:KB-P1ovf        5.46    4.400 No_date   28:05   38.09  n/a     .000
                 SUM=     1.0 01:KB-Pond1      206.72   16.838 No_date   28:05   38.09  n/a     .000
R0025:C00253------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:KB-Pond1      206.72   16.838 No_date   28:05   38.09  n/a     .000
      fname :KB-Pond1.0025
      remark:Total Flows at KB first pond
R0025:C00254------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-07          10.86    2.392 No_date   28:00   65.97 .887     .000
      [XIMP=.86:TIMP=.86]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI=2.00:LGI= 269.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00255------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-07          10.86    2.392 No_date   28:00   65.97  n/a     .000
     Major System   /     1.0 02:KB-07-MJ         .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-07-MN       10.86    2.094 No_date   27:56   66.02  n/a     .000
      {MjSysSto=.7523E+02, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00256------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-07-MJ         .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:KB-07-MN       10.86    2.094 No_date   27:56   66.02  n/a     .000
                 SUM=     1.0 01:KB-07-S        10.86    2.094 No_date   27:56   66.02  n/a     .000
R0025:C00257------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-08           6.61    1.292 No_date   28:00   53.97 .726     .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI=2.00:LGI= 210.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00258------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-08           6.61    1.292 No_date   28:00   53.97  n/a     .000
     Major System   /     1.0 02:KB-08-MJ         .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-08-MN        6.61    1.058 No_date   27:55   54.34  n/a     .000
      {MjSysSto=.6817E+02, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00259------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-08-MJ         .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:KB-08-MN        6.61    1.058 No_date   27:55   54.34  n/a     .000
                 SUM=     1.0 01:KB-08-S         6.61    1.058 No_date   27:55   54.34  n/a     .000
R0025:C00260------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-09           2.60     .599 No_date   28:00   65.30 .878     .000
      [XIMP=.86:TIMP=.86]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=2.00:LGI= 132.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00261------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-10_1         2.37     .550 No_date   28:00   65.30 .878     .000
      [XIMP=.86:TIMP=.86]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=2.00:LGI= 126.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00262------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-10_2         1.14     .266 No_date   28:00   65.30 .878     .000
      [XIMP=.86:TIMP=.86]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=2.00:LGI=  87.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00263------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-12           4.86    1.059 No_date   28:00   61.90 .832     .000
      [XIMP=.79:TIMP=.79]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.10:SLPI=2.00:LGI= 180.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00264------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-12           4.86    1.059 No_date   28:00   61.90  n/a     .000
     Major System   /     1.0 02:KB-12-MJ         .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-12-MN        4.86     .867 No_date   27:54   62.20  n/a     .000
      {MjSysSto=.6022E+02, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00265------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-12-MJ         .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:KB-12-MN        4.86     .867 No_date   27:54   62.20  n/a     .000
                 SUM=     1.0 01:KB-12-S         4.86     .867 No_date   27:54   62.20  n/a     .000
R0025:C00266------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-13          10.19    1.930 No_date   28:00   53.97 .726     .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI=2.00:LGI= 261.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00267------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-13          10.19    1.930 No_date   28:00   53.97  n/a     .000
     Major System   /     1.0 02:KB-13-MJ         .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-13-MN       10.19    1.722 No_date   27:57   53.98  n/a     .000
      {MjSysSto=.4703E+02, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00268------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-13-MJ         .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:KB-13-MN       10.19    1.722 No_date   27:57   53.98  n/a     .000
                 SUM=     1.0 01:KB-13-S        10.19    1.722 No_date   27:57   53.98  n/a     .000
R0025:C00269------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-14           5.47    1.075 No_date   28:00   53.97 .726     .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI=2.00:LGI= 191.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00270------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-14           5.47    1.075 No_date   28:00   53.97  n/a     .000
     Major System   /     1.0 02:KB-14-MJ         .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-14-MN        5.47     .873 No_date   27:55   54.32  n/a     .000
      {MjSysSto=.6018E+02, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00271------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-14-MJ         .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:KB-14-MN        5.47     .873 No_date   27:55   54.32  n/a     .000
                 SUM=     1.0 01:KB-14-S         5.47     .873 No_date   27:55   54.32  n/a     .000
R0025:C00272------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-16_2         3.42     .649 No_date   28:01   58.24 .783     .000
      [XIMP=.71:TIMP=.71]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .16:SLPI= .30:LGI= 151.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00273------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-Pond1      206.72   16.838 No_date   28:05   38.09  n/a     .000
                    +     1.0 02:KB-07-S        10.86    2.094 No_date   27:56   66.02  n/a     .000
                    +     1.0 02:KB-08-S         6.61    1.058 No_date   27:55   54.34  n/a     .000
                    +     1.0 02:KB-09           2.60     .599 No_date   28:00   65.30  n/a     .000
                    +     1.0 02:KB-10_1         2.37     .550 No_date   28:00   65.30  n/a     .000
                    +     1.0 02:KB-10_2         1.14     .266 No_date   28:00   65.30  n/a     .000
                    +     1.0 02:KB-12-S         4.86     .867 No_date   27:54   62.20  n/a     .000
                    +     1.0 02:KB-13-S        10.19    1.722 No_date   27:57   53.98  n/a     .000
                    +     1.0 02:KB-14-S         5.47     .873 No_date   27:55   54.32  n/a     .000
                    +     1.0 02:KB-16_2         3.42     .649 No_date   28:01   58.24  n/a     .000
                 SUM=     1.0 01:KB-P2         254.24   24.423 No_date   28:05   42.08  n/a     .000
R0025:C00274------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:KB-P2         254.24   24.423 No_date   28:05   42.08  n/a     .000
                out <=    1.0 01:KB-P2R        254.24   17.126 No_date   28:11   42.08  n/a     .000
           overflow <=    1.0 03:KB-P2ovf         .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.9755E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00275------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-P2R        254.24   17.126 No_date   28:11   42.08  n/a     .000
                    +     1.0 02:KB-P2ovf         .00     .000 No_date    0:00     .00  n/a     .000
                 SUM=     1.0 01:KB-Pond2      254.24   17.126 No_date   28:11   42.08  n/a     .000
R0025:C00276------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:KB-Pond2      254.24   17.126 No_date   28:11   42.08  n/a     .000
      fname :KB-Pond2.0025
      remark:Total Flows at KB second pond
R0025:C00277------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-16_1         2.80     .551 No_date   28:01   60.44 .812     .000
      [XIMP=.75:TIMP=.75]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .16:SLPI= .30:LGI= 137.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00278------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-Pond2      254.24   17.126 No_date   28:11   42.08  n/a     .000
                    +     1.0 02:KB-16_1         2.80     .551 No_date   28:01   60.44  n/a     .000
                 SUM=     1.0 01:KB-P3         257.04   17.347 No_date   28:10   42.28  n/a     .000
R0025:C00279------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:KB-P3         257.04   17.347 No_date   28:10   42.28  n/a     .000
                out <=    1.0 01:KB-P3R         10.42     .051 No_date   17:19   42.28  n/a     .000
           overflow <=    1.0 03:KB-P3ovf      246.62   17.293 No_date   28:10   42.28  n/a     .000
     {MxStoUsed=.1993E-02  m3, TotOvfVol=.1043E+02  m3, N-Ovf=    2, TotDurOvf=   23.hrs}
R0025:C00280------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-P3R         10.42     .051 No_date   17:19   42.28  n/a     .000
                    +     1.0 02:KB-P3ovf      246.62   17.293 No_date   28:10   42.28  n/a     .000
                 SUM=     1.0 01:KB-Pond3      257.04   17.344 No_date   28:10   42.28  n/a     .000
R0025:C00281------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:KB-Pond3      257.04   17.344 No_date   28:10   42.28  n/a     .000
      fname :KB-Pond3.0025
      remark:Total Flows at KB third pond
#****************************************************************************
#    EXISTING / PROPOSED Subcatchments (Kennedy-Burnett SWM Facility (118080), SWM Modeling Approach, NOVATECH Report Ju
#    - TO FRASER-CLARKE DRAIN
#****************************************************************************
R0025:C00282------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:FC-01           8.03    1.288 No_date   28:01   44.33 .596     .000
      [XIMP=.47:TIMP=.47]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 231.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00283------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:FC-01           8.03    1.288 No_date   28:01   44.33  n/a     .000
     Major System   /     1.0 02:FC-01-MJ         .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:FC-01-MN        8.03     .756 No_date   28:25   44.53  n/a     .000
      {MjSysSto=.2943E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00284------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:FC-01-MJ         .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:FC-01-MN        8.03     .756 No_date   27:53   44.53  n/a     .000
                 SUM=     1.0 01:FC-01-S         8.03     .756 No_date   27:53   44.53  n/a     .000
R0025:C00285------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:FC-02          16.05    3.458 No_date   28:00   69.06 .928     .000
      [XIMP=.93:TIMP=.93]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 327.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00286------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:FC-02          16.05    3.458 No_date   28:00   69.06  n/a     .000
     Major System   /     1.0 02:FC-02-MJ         .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:FC-02-MN       16.05    1.159 No_date   27:44   69.13  n/a     .000
      {MjSysSto=.1941E+04, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00287------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:FC-02-MJ         .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:FC-02-MN       16.05    1.159 No_date   27:44   69.13  n/a     .000
                 SUM=     1.0 01:FC-02-S        16.05    1.159 No_date   27:44   69.13  n/a     .000
R0025:C00288------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:FC-03           7.37    1.375 No_date   28:00   53.47 .719     .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 222.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00289------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:FC-03           7.37    1.375 No_date   28:00   53.47  n/a     .000
     Major System   /     1.0 02:FC-03-MJ         .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:FC-03-MN        7.37     .358 No_date   27:43   53.66  n/a     .000
      {MjSysSto=.9407E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00290------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:FC-03-MJ         .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:FC-03-MN        7.37     .358 No_date   27:43   53.66  n/a     .000
                 SUM=     1.0 01:FC-03-S         7.37     .358 No_date   27:43   53.66  n/a     .000
R0025:C00291------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:FC-04          12.87    2.308 No_date   28:01   53.47 .719     .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 293.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00292------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:FC-04          12.87    2.308 No_date   28:01   53.47  n/a     .000
     Major System   /     1.0 02:FC-04-MJ         .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:FC-04-MN       12.87     .741 No_date   27:45   53.74  n/a     .000
      {MjSysSto=.1387E+04, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00293------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:FC-04-MJ         .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:FC-04-MN       12.87     .741 No_date   27:45   53.74  n/a     .000
                 SUM=     1.0 01:FC-04-S        12.87     .741 No_date   27:45   53.74  n/a     .000
#****************************************************************************
#    PROPOSED Subcatchments (Kennedy-Burnett SWM Facility (118080), SWM Modeling Approach, NOVATECH Report June, 2020)
#    - TO JOCK RIVER
#****************************************************************************
R0025:C00294------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:JR-01           8.24    1.515 No_date   28:00   53.47 .719     .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 234.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00295------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:JR-01           8.24    1.515 No_date   28:00   53.47  n/a     .000
     Major System   /     1.0 02:JR-01-MJ         .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:JR-01-MN        8.24     .563 No_date   28:50   53.74  n/a     .000
      {MjSysSto=.7433E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00296------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:JR-01-MJ         .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:JR-01-MN        8.24     .563 No_date   27:45   53.74  n/a     .000
                 SUM=     1.0 01:JR-01-S         8.24     .563 No_date   27:45   53.74  n/a     .000
R0025:C00297------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:JR-02           1.59     .316 No_date   28:00   53.47 .719     .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 103.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0025:C00298------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:JR-02           1.59     .316 No_date   28:00   53.47  n/a     .000
     Major System   /     1.0 02:JR-02-MJ         .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:JR-02-MN        1.59     .153 No_date   27:47   53.69  n/a     .000
      {MjSysSto=.9432E+02, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00299------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:JR-02-MJ         .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:JR-02-MN        1.59     .153 No_date   27:47   53.69  n/a     .000
                 SUM=     1.0 01:JR-02-S         1.59     .153 No_date   27:47   53.69  n/a     .000
#****************************************************************************
#    Catchment FRASER
#    - To Fraser-Clarke drain (north of the Jock)
#    - Developed land with assumed 43% imp.
#    - 2020-12-17 Change Fraser area to be 35.1 as measured from QGIS
#    - 2020-12-17 All Fraser is undeveloped (Nashyd)
#****************************************************************************
R0025:C00300------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:FRASER-DRN     13.65     .594 No_date   28:22   34.14 .459     .000
      [CN= 77.0: N= 3.00: Tp=  .43]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0025:C00301------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:FRASER-D       21.61    3.258 No_date   28:01   56.29 .757     .000
      [XIMP=.58:TIMP=.58]
      [LOSS= 2 :CN= 80.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 380.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 26.32: SMAX=175.50: SK= .010]
R0025:C00302------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:FRASER-D       21.61    3.258 No_date   28:01   56.29  n/a     .000
     Major System   /     1.0 02:FRASER-J         .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:FRASER-N       21.61    2.281 No_date   27:55   56.43  n/a     .000
      {MjSysSto=.4729E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00303------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:FRASER-J         .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:FRASER-N       21.61    2.281 No_date   27:55   56.43  n/a     .000
                 SUM=     1.0 01:FRASER-S       21.61    2.281 No_date   27:55   56.43  n/a     .000
R0025:C00304------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-Pond3      257.04   17.344 No_date   28:10   42.28  n/a     .000
                    +     1.0 02:S-1-B          55.36    2.311 No_date   28:23   34.14  n/a     .000
                    +     1.0 02:FRASER-DRN     13.65     .594 No_date   28:22   34.14  n/a     .000
                    +     1.0 02:FRASER-S       21.61    2.281 No_date   27:55   56.43  n/a     .000
                    +     1.0 02:N_KB        54279.37  103.026 No_date   38:57   29.03  n/a     .000
                    +     1.0 02:FC-01-S         8.03     .756 No_date   27:53   44.53  n/a     .000
                    +     1.0 02:FC-02-S        16.05    1.159 No_date   27:44   69.13  n/a     .000
                    +     1.0 02:FC-03-S         7.37     .358 No_date   27:43   53.66  n/a     .000
                 SUM=     1.0 01:4241        54658.48  103.518 No_date   38:57   29.12  n/a     .000
R0025:C00305------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:4241        54658.48  103.518 No_date   38:57   29.12  n/a     .000
      fname :4241.0025
      remark:Total Flows at Ken-Burnett Outlet
# Hydrograph from Node Ken-Burnett to station 3633
# Channel X-Section obtained from RVCA Hydraulic Model - Station 4241
#
R0025:C00306------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
```

```
    ROUTE CHANNEL   ->    1.0 02:4241       54658.48  103.518 No_date   38:57   29.12  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:4241-out   54658.48  103.664 No_date   38:36   29.12  n/a     .000
      [L/S/n=  294./ .109/.035]
      {Vmax= 1.253:Dmax= 2.209}
R0025:C00307------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:4241-out   54658.48  103.664 No_date   38:36   29.12  n/a     .000
                     +    1.0 02:FC-04-S       12.87     .741 No_date   27:45   53.74  n/a     .000
                     +    1.0 02:JR-01-S        8.24     .563 No_date   27:45   53.74  n/a     .000
                     +    1.0 02:JR-02-S        1.59     .153 No_date   27:47   53.69  n/a     .000
                  SUM=    1.0 01:SN_KB      54681.18  103.700 No_date   38:36   29.13  n/a     .000
R0025:C00308------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_KB      54681.18  103.700 No_date   38:36   29.13  n/a     .000
      fname :SN_KB.0025
      remark:Total Flows before Station 3633
# Hydrograph from Station 3633 to Node Todd
# Channel X-Section obtained from RVCA Hydraulic Model - Station 3633
# JFSA 2021-02-26 change the channel length (at station 3633) from 650m to 608m and change the slope from 0.0498% to 0.2
#
R0025:C00309------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_KB      54681.18  103.700 No_date   38:36   29.13  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N_TO       54681.18  103.546 No_date   39:00   29.13  n/a     .000
      [L/S/n=  608./ .247/.035]
      {Vmax= 1.675:Dmax= 1.657}
#*****************************************************************************
#    Catchment Greenbank
#    - To Greenbank Drain (south of the Jock)
#    - JFSA 2021-01-18 add Greenbank pond as per JFSA, P598(06)-15, June 2016
#    - JFSA 2021-01-19 update area from 37.479 ha to 36.6 ha based on GIS measurements
#*****************************************************************************
R0025:C00310------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:Greenbank     36.60    5.574 No_date   28:02   58.33 .784     .000
      [XIMP=.64:TIMP=.68]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 494.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0025:C00311------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:Greenbank     36.60    5.574 No_date   28:02   58.33  n/a     .000
                 out <=   1.0 01:GreenB_MN     36.60    3.118 No_date   28:11   58.33  n/a     .000
            overflow <=   1.0 03:GreenB_MJ       .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.8739E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00312------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N_TO       54681.18  103.546 No_date   39:00   29.13  n/a     .000
                     +    1.0 02:GreenB_MJ       .00     .000 No_date    0:00     .00  n/a     .000
                     +    1.0 02:GreenB_MN     36.60    3.118 No_date   28:11   58.33  n/a     .000
                  SUM=    1.0 01:GreenB     54717.78  103.651 No_date   39:00   29.15  n/a     .000
R0025:C00313------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:GreenB     54717.78  103.651 No_date   39:00   29.15  n/a     .000
      fname :GreenB.0025
      remark:Total Flows at Greenbank Drain
#*****************************************************************************
#    Catchment TODD
#    - To Todd Drain (south of the Jock)
#    - Subdivision with 43% imp. as per Barrhaven South MSS
#    - 2020-11-30 increase imp. based on P598(04)-11
#    - 2020-11-30 update TODD Tributary Drainage Area to  = 146.015 ha based on P598(04)-11
#    - 2020-11-30 split TODD Drainage Area to MAJOR, MINOR, POND and ALL
#*****************************************************************************
#    - JFSA 2021-01-19 add "TODD_MN1" as part of Clarke("W_CLAR_MJ") and remove it from Todd
R0025:C00314------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:TODD_MN2       2.10     .339 No_date   28:00   53.59 .720     .000
      [XIMP=.53:TIMP=.57]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 118.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0025:C00315------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:TODD_MN3        .12     .020 No_date   28:00   53.57 .720     .000
      [XIMP=.53:TIMP=.57]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI=  28.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0025:C00316------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:TODD_MJ       30.23    4.269 No_date   28:02   55.13 .741     .000
      [XIMP=.52:TIMP=.64]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 449.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0025:C00317------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:TODD_ALL     112.91   13.312 No_date   28:05   53.38 .718     .000
      [XIMP=.52:TIMP=.57]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 868.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0025:C00318------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:TODD_P         3.06     .535 No_date   28:00   57.01 .766     .000
      [XIMP=.63:TIMP=.63]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 143.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
# 5-Year + 12% Capture
R0025:C00319------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:TODD_MJ       30.23    4.269 No_date   28:02   55.13  n/a     .000
                 out <=   1.0 01:TODD_MJn      29.48    3.314 No_date   27:57   55.13  n/a     .000
            overflow <=   1.0 03:TODD_MJj        .75     .946 No_date   28:03   55.13  n/a     .000
     {MxStoUsed=.1175E-03  m3, TotOvfVol=.4153E-01  m3, N-Ovf=    1, TotDurOvf=    0.hrs}
# 5-Year + 12% Capture
R0025:C00320------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:TODD_MN2       2.10     .339 No_date   28:00   53.59  n/a     .000
                 out <=   1.0 01:TODD_MN2n      2.06     .268 No_date   27:54   53.60  n/a     .000
            overflow <=   1.0 03:TODD_MN2j       .04     .067 No_date   28:00   53.59  n/a     .000
     {MxStoUsed=.8415E-04  m3, TotOvfVol=.2217E-02  m3, N-Ovf=    1, TotDurOvf=    0.hrs}
R0025:C00321------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:TODD_MN3        .12     .020 No_date   28:00   53.58  n/a     .000
                 out <=   1.0 01:TODD_MN3n       .11     .016 No_date   27:53   53.58  n/a     .000
            overflow <=   1.0 03:TODD_MN3j       .00     .004 No_date   28:00   53.58  n/a     .000
     {MxStoUsed=.1067E-03  m3, TotOvfVol=.1192E-03  m3, N-Ovf=    1, TotDurOvf=    0.hrs}
R0025:C00322------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A2            25.50    2.974 No_date   28:03   49.44 .665     .000
      [XIMP=.42:TIMP=.52]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 566.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0025:C00323------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A2            25.50    2.974 No_date   28:03   49.44  n/a     .000
     Major System   /     1.0 02:A2-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A2-MN         25.50    1.818 No_date   27:54   49.64  n/a     .000
      {MjSysSto=.8120E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00324------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:TODD_MN2n      2.06     .268 No_date   27:54   53.60  n/a     .000
                     +    1.0 02:TODD_MN3n       .11     .016 No_date   27:53   53.58  n/a     .000
                     +    1.0 02:TODD_MJj        .75     .946 No_date   28:03   55.13  n/a     .000
                     +    1.0 02:TODD_P         3.06     .535 No_date   28:00   57.01  n/a     .000
                     +    1.0 02:TODD_ALL     112.91   13.312 No_date   28:05   53.38  n/a     .000
                     +    1.0 02:W_CLAR_MJn     1.73     .213 No_date   27:54   52.78  n/a     .000
                  SUM=    1.0 01:TODD         120.62   14.962 No_date   28:03   53.48  n/a     .000
R0025:C00325------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:TODD         120.62   14.962 No_date   28:03   53.48  n/a     .000
      fname :TODD.0025
      remark:Total Flows at Todd Drain
#*****************************************************************************
#    Todd Pond 3
#    - Rating curve obtained from Barrhaven South MSS modeling
#    - stantec 2007, Tributary Drainage Area to MSS Pond 3 = 193 ha
#*****************************************************************************
R0025:C00326------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:TODD         120.62   14.962 No_date   28:03   53.48  n/a     .000
                 out <=   1.0 01:MS_P3        120.62    9.717 No_date   28:14   53.48  n/a     .000
            overflow <=   1.0 03:P3-OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.2619E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00327------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:GreenB     54717.78  103.651 No_date   39:00   29.15  n/a     .000
                     +    1.0 02:MS_P3        120.62    9.717 No_date   28:14   53.48  n/a     .000
                     +    1.0 02:P3-OVF          .00     .000 No_date    0:00     .00  n/a     .000
                     +    1.0 02:TODD_MN2j       .04     .067 No_date   28:00   53.59  n/a     .000
                     +    1.0 02:A2-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                  SUM=    1.0 01:SN_TO      54838.44  103.908 No_date   39:00   29.21  n/a     .000
R0025:C00328------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_TO      54838.44  103.908 No_date   39:00   29.21  n/a     .000
      fname :SN_TO.0025
      remark:Total Flows at Todd Drain
#
# Hydrograph from Todd Drain routed to Corrigan Drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 2462
# 2021-02-19 Change the slope from 0.033 % (as per Stantec Report 2007) to 0.05 % so the model will be more stable and g
R0025:C00329------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_TO      54838.44  103.908 No_date   39:00   29.21  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:N_TO       54838.44  103.688 No_date   39:23   29.21  n/a     .000
      [L/S/n=  280./ .050/.045]
      {Vmax=  .905:Dmax= 3.151}
R0025:C00330------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:N_TO       54838.44  103.688 No_date   39:23   29.21  n/a     .000
      fname :N_TO.0025
      remark:Total inflows at Station 2462
#*****************************************************************************
#    Catchment CORRIG
#    - To Corrigan Drain (south of the Jock)
#    - Primarily Developed (medium density)
#    - JFSA JAN 2021, add Corrigan subcatchments as per IBI, July 2008
#*****************************************************************************
R0025:C00331------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:corr1         15.87    2.535 No_date   28:01   57.01 .766     .000
      [XIMP=.63:TIMP=.63]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 325.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0025:C00332------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:corr1         15.87    2.535 No_date   28:01   57.01  n/a     .000
     Major System   /     1.0 02:corr1-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:corr1-MN      15.87    1.818 No_date   28:15   57.37  n/a     .000
      {MjSysSto=.3150E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00333------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:corr2         12.47     .276 No_date   29:10   34.14 .459     .000
      [CN= 77.0: N= 3.00: Tp= 1.10]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0025:C00334------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A1-Corrig     15.75    2.022 No_date   28:01   49.44 .665     .000
      [XIMP=.42:TIMP=.52]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 324.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0025:C00335------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A1-Corrig     15.75    2.022 No_date   28:01   49.44  n/a     .000
     Major System   /     1.0 02:A1-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A1-MN         15.75    1.818 No_date   27:58   49.57  n/a     .000
      {MjSysSto=.4966E+02, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00336------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:B1             2.77     .097 No_date   28:09   21.19 .285     .000
      [CN= 56.0: N= 3.00: Tp=  .23]
      [IaREC= 4.00: SMIN= 79.69: SMAX=531.24: SK= .010]
      [InterEventTime=  12.00]
R0025:C00337------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A4             1.27     .212 No_date   28:01   57.38 .771     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 253.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0025:C00338------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A4             1.27     .212 No_date   28:01   57.38  n/a     .000
     Major System   /     1.0 02:A4-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A4-MN          1.27     .212 No_date   28:01   57.38  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00339------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:A1-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                     +    1.0 02:A1-MN         15.75    1.818 No_date   27:58   49.57  n/a     .000
                     +    1.0 02:corr1-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                     +    1.0 02:corr1-MN      15.87    1.818 No_date   28:15   57.37  n/a     .000
                     +    1.0 02:corr2         12.47     .276 No_date   29:10   34.14  n/a     .000
                     +    1.0 02:B1             2.77     .097 No_date   28:09   21.19  n/a     .000
                     +    1.0 02:A4-MN          1.27     .212 No_date   28:01   57.38  n/a     .000
                  SUM=    1.0 01:MH101         48.13    3.979 No_date   28:02   46.72  n/a     .000
R0025:C00340------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH101         48.13    3.979 No_date   28:02   46.72  n/a     .000
      fname :MH101.0025
      remark:Total Flows at MH101
R0025:C00341------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH101         48.13    3.979 No_date   28:02   46.72  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:101-102       48.13    3.953 No_date   28:05   46.72  n/a     .000
      [L/S/n=  368./ .540/.013]
      {Vmax= 3.134:Dmax= 1.114}
      [Din= 1.05:Dused= 1.36}
R0025:C00342------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:A2-MN         25.50    1.818 No_date   27:54   49.64  n/a     .000
                     +    1.0 02:101-102       48.13    3.953 No_date   28:05   46.72  n/a     .000
                  SUM=    1.0 01:MH102         73.63    5.771 No_date   28:05   47.73  n/a     .000
R0025:C00343------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH102         73.63    5.771 No_date   28:05   47.73  n/a     .000
      fname :MH102.0025
      remark:Total Flows at MH102
R0025:C00344------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A5             1.60     .279 No_date   28:01   60.02 .807     .000
      [XIMP=.71:TIMP=.71]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 300.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0025:C00345------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:A4-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                     +    1.0 02:A5             1.60     .279 No_date   28:01   60.02  n/a     .000
                  SUM=    1.0 01:A5T            1.60     .279 No_date   28:01   60.02  n/a     .000
R0025:C00346------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A5T            1.60     .279 No_date   28:01   60.02  n/a     .000
     Major System   /     1.0 02:A5-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A5-MN          1.60     .279 No_date   28:01   60.02  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00347------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH102         73.63    5.771 No_date   28:05   47.73  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:102-103       73.63    5.682 No_date   28:08   47.73  n/a     .000
      [L/S/n=  504./ .280/.013]
      {Vmax= 2.688:Dmax= 1.448}
      [Din= 1.50:Dused= 1.76}
R0025:C00348------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:102-103       73.63    5.682 No_date   28:08   47.73  n/a     .000
                     +    1.0 02:A5-MN          1.60     .279 No_date   28:01   60.02  n/a     .000
                  SUM=    1.0 01:MH103         75.23    5.850 No_date   28:06   47.99  n/a     .000
R0025:C00349------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH103         75.23    5.850 No_date   28:06   47.99  n/a     .000
      fname :MH103.0025
      remark:Total Flows at MH103
R0025:C00350------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH103         75.23    5.850 No_date   28:06   47.99  n/a     .000
     [RDT= 1.00] out<-    1.0 01:103-104       75.23    5.807 No_date   28:08   47.99  n/a     .000
      [L/S/n=  438./ .460/.013]
      {Vmax= 3.289:Dmax= 1.280}
      [Din= 1.65:Dused= 1.65}
R0025:C00351------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A6             1.56     .274 No_date   28:00   60.02 .807     .000
      [XIMP=.71:TIMP=.71]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 280.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0025:C00352------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:A5-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                     +    1.0 02:A6             1.56     .274 No_date   28:00   60.02  n/a     .000
                  SUM=    1.0 01:A6T            1.56     .274 No_date   28:00   60.02  n/a     .000
R0025:C00353------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A6T            1.56     .274 No_date   28:00   60.02  n/a     .000
     Major System   /     1.0 02:A6-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A6-MN          1.56     .274 No_date   28:00   60.02  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00354------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:A6-MN          1.56     .274 No_date   28:00   60.02  n/a     .000
                     +    1.0 02:103-104       75.23    5.807 No_date   28:08   47.99  n/a     .000
                     +    1.0 02:TODD_MJn      29.48    3.314 No_date   27:57   55.13  n/a     .000
                  SUM=    1.0 01:MH104        106.27    9.269 No_date   28:06   50.14  n/a     .000
R0025:C00355------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH104        106.27    9.269 No_date   28:06   50.14  n/a     .000
      fname :MH104.0025
      remark:Total Flows at MH104
R0025:C00356------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:B2            12.31    1.521 No_date   28:02   49.75 .669     .000
      [XIMP=.41:TIMP=.54]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 417.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0025:C00357------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:B2            12.31    1.521 No_date   28:02   49.75  n/a     .000
     Major System   /     1.0 02:B2-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:B2-MN         12.31    1.029 No_date   27:55   49.85  n/a     .000
      {MjSysSto=.2691E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00358------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:B2-MN         12.31    1.029 No_date   27:55   49.85  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:315-333       12.31    1.029 No_date   28:24   49.85  n/a     .000
      [L/S/n=  254./ .100/.013]
      {Vmax= 1.220:Dmax=  .838}
      [Din= 1.20:Dused= 1.20}
R0025:C00359------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:B3             5.59     .715 No_date   28:02   49.75 .669     .000
      [XIMP=.41:TIMP=.54]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 345.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0025:C00360------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:B3             5.59     .715 No_date   28:02   49.75  n/a     .000
     Major System   /     1.0 02:B3-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:B3-MN          5.59     .459 No_date   27:54   49.80  n/a     .000
      {MjSysSto=.1451E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00361------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:B3-MN          5.59     .459 No_date   27:54   49.80  n/a     .000
                     +    1.0 02:315-333       12.31    1.029 No_date   28:24   49.85  n/a     .000
                  SUM=    1.0 01:MH333         17.90    1.488 No_date   28:24   49.83  n/a     .000
R0025:C00362------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH333         17.90    1.488 No_date   28:24   49.83  n/a     .000
      fname :MH333.0025
      remark:Total Flows at MH333
R0025:C00363------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH333         17.90    1.488 No_date   28:24   49.83  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:333-335       17.90    1.485 No_date   28:24   49.83  n/a     .000
      [L/S/n=  251./ .100/.013]
      {Vmax= 1.302:Dmax= 1.057}
      [Din= 1.20:Dused= 1.29}
R0025:C00364------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:333-335       17.90    1.485 No_date   28:24   49.83  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:335-338       17.90    1.490 No_date   28:26   49.83  n/a     .000
      [L/S/n=  185./ .100/.013]
      {Vmax= 1.301:Dmax= 1.056}
      [Din= 1.20:Dused= 1.29}
R0025:C00365------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
```

```
    ROUTE PIPE      ->    1.0 02:335-338       17.90    1.490 No_date   28:26   49.83  n/a      .000
     [RDT= 1.00] out<-    1.0 01:338-340       17.90    1.456 No_date   28:26   49.83  n/a      .000
      [L/S/n=  233./ .100/.013]
      {Vmax= 1.331:Dmax=  .985}
      [Din= 1.35:Dused= 1.35}
R0025:C00366------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:B4             7.60     .960 No_date   28:02   49.75 .669      .000
      [XIMP=.41:TIMP=.54]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 388.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0025:C00367------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:B4             7.60     .960 No_date   28:02   49.75  n/a      .000
     Major System   /     1.0 02:B4-MJ           .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:B4-MN          7.60     .655 No_date   27:55   50.00  n/a      .000
      {MjSysSto=.1611E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00368------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:338-340       17.90    1.456 No_date   28:26   49.83  n/a      .000
                    +     1.0 02:B4-MN          7.60     .655 No_date   27:55   50.00  n/a      .000
                 SUM=     1.0 01:MH340         25.50    2.104 No_date   28:18   49.88  n/a      .000
R0025:C00369------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH340         25.50    2.104 No_date   28:18   49.88  n/a      .000
      fname :MH340.0025
      remark:Total Flows at MH340
R0025:C00370------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH340         25.50    2.104 No_date   28:18   49.88  n/a      .000
     [RDT= 1.00] out<-    1.0 01:340-104       25.50    2.086 No_date   28:18   49.88  n/a      .000
      [L/S/n=  240./ .150/.013]
      {Vmax= 1.722:Dmax=  .917}
      [Din= 1.65:Dused= 1.65}
R0025:C00371------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:340-104       25.50    2.086 No_date   28:18   49.88  n/a      .000
                    +     1.0 02:MH104        106.27    9.269 No_date   28:06   50.14  n/a      .000
                 SUM=     1.0 01:MH104T       131.77   11.233 No_date   28:08   50.09  n/a      .000
R0025:C00372------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH104T       131.77   11.233 No_date   28:08   50.09  n/a      .000
 *   [RDT= 1.00] out<-    1.0 01:104-105      131.77   10.846 No_date   28:08   50.09  n/a      .000
      [L/S/n=  380./ .100/.013]
      {Vmax= 2.100:Dmax= 1.992}
      {HGTH= 2.35:WDTH= 2.68}
R0025:C00373------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:B5             2.20     .346 No_date   28:00   53.85 .724      .000
      [XIMP=.57:TIMP=.57]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 187.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0025:C00374------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:B5             2.20     .346 No_date   28:00   53.85  n/a      .000
     Major System   /     1.0 02:B5-MJ           .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:B5-MN          2.20     .260 No_date   27:54   53.87  n/a      .000
      {MjSysSto=.3304E+02, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00375------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A8              .96     .177 No_date   28:00   60.02 .807      .000
      [XIMP=.71:TIMP=.71]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 186.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0025:C00376------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:A6-MJ           .00     .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:A8              .96     .177 No_date   28:00   60.02  n/a      .000
                 SUM=     1.0 01:A8T             .96     .177 No_date   28:00   60.02  n/a      .000
R0025:C00377------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A8T             .96     .177 No_date   28:00   60.02  n/a      .000
     Major System   /     1.0 02:A8-MJ           .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:A8-MN           .96     .177 No_date   28:00   60.02  n/a      .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00378------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:104-105      131.77   10.846 No_date   28:08   50.09  n/a      .000
                    +     1.0 02:B5-MN          2.20     .260 No_date   27:54   53.87  n/a      .000
                    +     1.0 02:A8-MN           .96     .177 No_date   28:00   60.02  n/a      .000
                    +     1.0 02:TODD_MN3j       .00     .004 No_date   28:00   53.58  n/a      .000
                 SUM=     1.0 01:MH105        134.93   11.175 No_date   28:08   50.23  n/a      .000
R0025:C00379------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH105        134.93   11.175 No_date   28:08   50.23  n/a      .000
      fname :MH105.0025
      remark:Total Flows at MH105
R0025:C00380------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
 *  DIVERT HYD      ->    1.0 01:A8-MJ           .00     .000 No_date    0:00     .00  n/a      .000
           diverted <=    1.0 02:A8-MJ-JR        .00     .000 No_date    0:00     .00  n/a      .000
           diverted <=    1.0 03:A8-MJ-B6        .00     .000 No_date    0:00     .00  n/a      .000
R0025:C00381------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    DIVERT HYD      ->    1.0 01:MH105        134.93   11.175 No_date   28:08   50.23  n/a      .000
           diverted <=    1.0 02:MH105-JR      33.95    8.167 No_date   28:08   50.23  n/a      .000
           diverted <=    1.0 03:MH105-B6     100.98    3.008 No_date   28:08   50.23  n/a      .000
R0025:C00382------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:B7             7.19     .975 No_date   28:01   49.75 .669      .000
      [XIMP=.41:TIMP=.54]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 211.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0025:C00383------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:B4-MJ           .00     .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:B7             7.19     .975 No_date   28:01   49.75  n/a      .000
                 SUM=     1.0 01:B7-B4MJ        7.19     .975 No_date   28:01   49.75  n/a      .000
R0025:C00384------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:B7-B4MJ        7.19     .975 No_date   28:01   49.75  n/a      .000
     Major System   /     1.0 02:B7R-MJ          .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:B7R-MN         7.19     .629 No_date   27:53   50.01  n/a      .000
      {MjSysSto=.1702E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00385------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:B7R-MN         7.19     .629 No_date   27:53   50.01  n/a      .000
 *   [RDT= 1.00] out<-    1.0 01:360-106A       7.19     .629 No_date   28:21   50.01  n/a      .000
      [L/S/n=  167./ .100/.013]
      {Vmax= 1.089:Dmax=  .665}
      [Din= 1.05:Dused= 1.05}
R0025:C00386------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:B6             3.29     .465 No_date   28:00   49.75 .669      .000
      [XIMP=.41:TIMP=.54]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 148.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0025:C00387------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:B6             3.29     .465 No_date   28:00   49.75  n/a      .000
     Major System   /     1.0 02:B6-MJ           .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:B6-MN          3.29     .064 No_date   27:34   49.75  n/a      .000
      {MjSysSto=.5165E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00388------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:EX-LAND       32.50    4.063 No_date   28:02   50.08 .673      .000
      [XIMP=.50:TIMP=.50]
      [LOSS= 2 :CN= 74.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 465.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 36.67: SMAX=244.49: SK= .010]
R0025:C00389------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:EX-LAND       32.50    4.063 No_date   28:02   50.08  n/a      .000
     Major System   /     1.0 02:EX-LAND-MJ      .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:EX-LAND-MN    32.50    2.275 No_date   27:52   50.26  n/a      .000
      {MjSysSto=.1224E+04, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00390------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:B7R-MJ          .00     .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:EX-LAND-MJ      .00     .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:B5-MJ           .00     .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:B6-MJ           .00     .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:B6-MN          3.29     .064 No_date   27:34   49.75  n/a      .000
                    +     1.0 02:A8-MJ-B6        .00     .000 No_date    0:00     .00  n/a      .000
                 SUM=     1.0 01:B6-B7ExMJ      3.29     .064 No_date   27:34   49.75  n/a      .000
R0025:C00391------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:B6-B7ExMJ      3.29     .064 No_date   27:34   49.75  n/a      .000
     Major System   /     1.0 02:B6R-MJ          .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:B6R-MN         3.29     .064 No_date   27:34   49.75  n/a      .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00392------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH105-B6     100.98    3.008 No_date   28:08   50.23  n/a      .000
     [RDT= 1.00] out<-    1.0 01:105-106A     100.98    3.018 No_date   28:02   50.23  n/a      .000
      [L/S/n=  208./ .100/.013]
      {Vmax= 1.597:Dmax= 1.249}
      [Din= 1.80:Dused= 1.80}
R0025:C00393------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:360-106A       7.19     .629 No_date   28:21   50.01  n/a      .000
                    +     1.0 02:105-106A     100.98    3.018 No_date   28:02   50.23  n/a      .000
                    +     1.0 02:B6R-MN         3.29     .064 No_date   27:34   49.75  n/a      .000
                    +     1.0 02:B6R-MJ          .00     .000 No_date    0:00     .00  n/a      .000
                 SUM=     1.0 01:MH106A       111.46    3.702 No_date   28:02   50.20  n/a      .000
R0025:C00394------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH106A       111.46    3.702 No_date   28:02   50.20  n/a      .000
      fname :MH106A.0025
      remark:Total Flows at MH106A
R0025:C00395------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH106A       111.46    3.702 No_date   28:02   50.20  n/a      .000
 *   [RDT= 1.00] out<-    1.0 01:106A-106     111.46    3.699 No_date   28:16   50.20  n/a      .000
      [L/S/n=  190./ .100/.013]
      {Vmax= 1.635:Dmax= 1.487}
      [Din= 1.80:Dused= 1.81}
R0025:C00396------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A9             2.44     .433 No_date   28:00   60.02 .807      .000
      [XIMP=.71:TIMP=.71]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 262.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0025:C00397------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A9             2.44     .433 No_date   28:00   60.02  n/a      .000
     Major System   /     1.0 02:A9-MJ           .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:A9-MN          2.44     .433 No_date   28:00   60.02  n/a      .000
R0025:C00398------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:106A-106     111.46    3.699 No_date   28:16   50.20  n/a      .000
                    +     1.0 02:A9-MN          2.44     .433 No_date   28:00   60.02  n/a      .000
                 SUM=     1.0 01:MH106        113.90    4.090 No_date   28:01   50.41  n/a      .000
R0025:C00399------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH106        113.90    4.090 No_date   28:01   50.41  n/a      .000
      fname :MH106.0025
      remark:Total Flows at MH106
R0025:C00400------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH106        113.90    4.090 No_date   28:01   50.41  n/a      .000
 *   [RDT= 1.00] out<-    1.0 01:106-107      113.90    4.067 No_date   28:03   50.41  n/a      .000
      [L/S/n=  123./ .100/.013]
      {Vmax= 1.676:Dmax= 1.544}
      [Din= 1.80:Dused= 1.88}
R0025:C00401------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A10            4.14     .526 No_date   28:01   46.81 .629      .000
      [XIMP=.35:TIMP=.47]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 183.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0025:C00402------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A10            4.14     .526 No_date   28:01   46.81  n/a      .000
     Major System   /     1.0 02:A10-MJ          .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:A10-MN         4.14     .310 No_date   27:52   46.90  n/a      .000
      {MjSysSto=.1196E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00403------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A11           10.61    1.511 No_date   28:01   54.09 .727      .000
      [XIMP=.53:TIMP=.62]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 379.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0025:C00404------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A11           10.61    1.511 No_date   28:01   54.09  n/a      .000
     Major System   /     1.0 02:A11-MJ          .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:A11-MN        10.61     .993 No_date   27:54   54.21  n/a      .000
      {MjSysSto=.2791E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00405------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:106-107      113.90    4.067 No_date   28:03   50.41  n/a      .000
                    +     1.0 02:A10-MN         4.14     .310 No_date   27:52   46.90  n/a      .000
                    +     1.0 02:A11-MN        10.61     .993 No_date   27:54   54.21  n/a      .000
                 SUM=     1.0 01:MH107        128.65    5.370 No_date   28:03   50.61  n/a      .000
R0025:C00406------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH107        128.65    5.370 No_date   28:03   50.61  n/a      .000
      fname :MH107.0025
      remark:Total Flows at MH107
R0025:C00407------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH107        128.65    5.370 No_date   28:03   50.61  n/a      .000
 *   [RDT= 1.00] out<-    1.0 01:107-119      128.65    5.374 No_date   28:04   50.61  n/a      .000
      [L/S/n=  114./ .120/.013]
      {Vmax= 1.922:Dmax= 1.653}
      [Din= 1.80:Dused= 2.01}
R0025:C00408------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:107-119      128.65    5.374 No_date   28:04   50.61  n/a      .000
 *   [RDT= 1.00] out<-    1.0 01:119-108      128.65    5.354 No_date   28:04   50.61  n/a      .000
      [L/S/n=   66./ .120/.013]
      {Vmax= 1.922:Dmax= 1.653}
      [Din= 1.80:Dused= 2.01}
R0025:C00409------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A12           12.29    1.704 No_date   28:01   49.75 .669      .000
      [XIMP=.41:TIMP=.54]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 183.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0025:C00410------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A12           12.29    1.704 No_date   28:01   49.75  n/a      .000
     Major System   /     1.0 02:A12-MJ          .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:A12-MN        12.29    1.029 No_date   27:52   49.91  n/a      .000
      {MjSysSto=.3558E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00411------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A13            2.59     .435 No_date   28:01   60.02 .807      .000
      [XIMP=.71:TIMP=.71]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 379.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0025:C00412------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A13            2.59     .435 No_date   28:01   60.02  n/a      .000
     Major System   /     1.0 02:A13-MJ          .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:A13-MN         2.59     .435 No_date   28:01   60.02  n/a      .000
R0025:C00413------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:Pond-Block     2.94     .375 No_date   28:00   47.01 .632      .000
      [XIMP=.41:TIMP=.41]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 183.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0025:C00414------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:119-108      128.65    5.354 No_date   28:04   50.61  n/a      .000
                    +     1.0 02:A13-MN         2.59     .435 No_date   28:01   60.02  n/a      .000
                    +     1.0 02:A12-MN        12.29    1.029 No_date   27:52   49.91  n/a      .000
                 SUM=     1.0 01:MH108        143.53    6.791 No_date   28:03   50.72  n/a      .000
R0025:C00415------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH108        143.53    6.791 No_date   28:03   50.72  n/a      .000
      fname :MH108.0025
      remark:Total Flows at MH108
R0025:C00416------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH108        143.53    6.791 No_date   28:03   50.72  n/a      .000
 *   [RDT= 1.00] out<-    1.0 01:108-116      143.53    6.772 No_date   28:04   50.72  n/a      .000
      [L/S/n=   77./ .130/.013]
      {Vmax= 2.100:Dmax= 1.778}
      [Din= 1.80:Dused= 2.17}
R0025:C00417------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:108-116      143.53    6.772 No_date   28:04   50.72  n/a      .000
 *   [RDT= 1.00] out<-    1.0 01:116-corrig   143.53    6.762 No_date   28:05   50.72  n/a      .000
      [L/S/n=   80./ .130/.013]
      {Vmax= 2.098:Dmax= 1.776}
      [Din= 1.80:Dused= 2.16}
R0025:C00418------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:116-corrig   143.53    6.762 No_date   28:05   50.72  n/a      .000
                    +     1.0 02:Pond-Block     2.94     .375 No_date   28:00   47.01  n/a      .000
                 SUM=     1.0 01:Corrigan     146.47    7.034 No_date   28:04   50.65  n/a      .000
R0025:C00419------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:Corrigan     146.47    7.034 No_date   28:04   50.65  n/a      .000
      fname :Corrigan.0025
      remark:HYD_COMMENT=["Total Flows at Corrigan Pond]
R0025:C00420------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:Corrigan     146.47    7.034 No_date   28:04   50.65  n/a      .000
                out <=    1.0 01:Co-P         146.47    6.458 No_date   28:16   50.64  n/a      .000
           overflow <=    1.0 03:Co-P-OVF        .00     .000 No_date    0:00     .00  n/a      .000
     {MxStoUsed=.1034E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00421------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:Co-P-OVF        .00     .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:Co-P         146.47    6.458 No_date   28:16   50.64  n/a      .000
                    +     1.0 02:N_TO       54838.44  103.688 No_date   39:23   29.21  n/a      .000
                    +     1.0 02:MH105-JR      33.95    8.167 No_date   28:08   50.23  n/a      .000
                    +     1.0 02:A8-MJ-JR        .00     .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:A9-MJ           .00     .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:A10-MJ          .00     .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:A11-MJ          .00     .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:A12-MJ          .00     .000 No_date    0:00     .00  n/a      .000
                    +     1.0 02:A13-MJ          .00     .000 No_date    0:00     .00  n/a      .000
                 SUM=     1.0 01:corrig     55018.86  103.978 No_date   39:24   29.28  n/a      .000
R0025:C00422------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:corrig     55018.86  103.978 No_date   39:24   29.28  n/a      .000
      fname :corrig.0025
      remark:Total Flows at Corrigan Pond
#*****************************************************************************
#    Corrigan Pond 1
#    - Rating curve obtained from Barrhaven South MSS modeling
#    - Tributary Drainage Area to MSS Pond 1 = 145 ha
#*****************************************************************************
#
# Hydrograph from Corrigan Drain routed to Jockvale Road
# Channel X-Section obtained from RVCA Hydraulic Model - Station 2462
#
R0025:C00423------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:corrig     55018.86  103.978 No_date   39:24   29.28  n/a      .000
     [RDT= 1.00] out<-    1.0 01:N_MI       55018.86  103.970 No_date   39:27   29.28  n/a      .000
      [L/S/n=  580./ .445/.045]
      {Vmax= 1.914:Dmax= 1.789}
#*****************************************************************************
#    Catchment MILLS
#    - To SWM Facility north of the Jock
#    - Primarily residental development
#*****************************************************************************
R0025:C00424------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:MILLS        175.99   15.275 No_date   28:07   44.62 .600      .000
      [XIMP=.38:TIMP=.38]
      [LOSS= 2 :CN= 74.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI=1118.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 36.67: SMAX=244.49: SK= .010]
#*****************************************************************************
#    Chapman Mills SWM Pond
#    - Rating curve obtained from CCL hydraulic modeling
#*****************************************************************************
R0025:C00425------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:MILLS        175.99   15.275 No_date   28:07   44.62  n/a      .000
                out <=    1.0 01:MILL_P       162.60    4.050 No_date   28:16   44.62  n/a      .000
           overflow <=    1.0 03:MIL-OV        13.39    8.160 No_date   28:16   44.62  n/a      .000
     {MxStoUsed=.2310E+01  m3, TotOvfVol=.5973E+00  m3, N-Ovf=    2, TotDurOvf=    1.hrs}
R0025:C00426------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N_MI       55018.86  103.970 No_date   39:27   29.28  n/a      .000
                    +     1.0 02:MIL-OV        13.39    8.160 No_date   28:16   44.62  n/a      .000
                    +     1.0 02:MILL_P       162.60    4.050 No_date   28:16   44.62  n/a      .000
                 SUM=     1.0 01:SN_MI      55194.86  104.359 No_date   39:26   29.33  n/a      .000
R0025:C00427------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_MI      55194.86  104.359 No_date   39:26   29.33  n/a      .000
      fname :SN_MI.0025
```

```
      remark:Total Flows at Jockvale Road
#
# Hydrograph from Jockvale Road routed to Heart's Desire
# Channel X-Section obtained from RVCA Hydraulic Model - Station 689
#
R0025:C00428------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_MI      55194.86  104.359 No_date   39:26   29.33  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N_DE       55194.86  104.140 No_date   39:45   29.33  n/a     .000
      [L/S/n= 1962./ .223/.045]
      {Vmax= 1.483:Dmax= 2.264}
#****************************************************************************
#    Catchment DESIRE
#    - To Jock River (north of the Jock)
#    - Rural-estate subdivision (Heart's Desire Community)
#****************************************************************************
R0025:C00429------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:DESIRE        23.78    2.161 No_date   28:03   40.77 .548     .000
      [XIMP=.25:TIMP=.25]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 400.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
#****************************************************************************
#    Catchment JOCKVA
#    - To Jockvale SWM Facility
#    - Residential development & golf course
#    - JFSA 2021-01-11 update JOCKVA after updating CORRIG as per IBI GROUP, July 2008.
#      JOCKVA area became 225.13 ha instead of 257.63 ha. JOCKVA separated into two areas JOCKVA and EX-LAND 32.5 ha as
#****************************************************************************
R0025:C00430------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:JOCKVA       225.13   21.797 No_date   28:07   50.08 .673     .000
      [XIMP=.50:TIMP=.50]
      [LOSS= 2 :CN= 74.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI=1311.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 36.67: SMAX=244.49: SK= .010]
R0025:C00431------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:EX-LAND-MN    32.50    2.275 No_date   27:52   50.26  n/a     .000
                    +     1.0 02:JOCKVA       225.13   21.797 No_date   28:07   50.08  n/a     .000
                    +     1.0 02:B2-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:B3-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                 SUM=     1.0 01:JOCKVA-TO    257.63   24.072 No_date   28:07   50.10  n/a     .000
R0025:C00432------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:JOCKVA-TO    257.63   24.072 No_date   28:07   50.10  n/a     .000
      fname :JOCKVA-TO.0025
      remark:Total Flows at KB first pond
#****************************************************************************
#    Jockvale SWM Facility
#    - Rating curve obtained from Jockvale Servicing Study (CCL 1999)
#****************************************************************************
R0025:C00433------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:JOCKVA-TO    257.63   24.072 No_date   28:07   50.10  n/a     .000
                 out <=   1.0 01:JOCK_P       257.63    9.145 No_date   28:37   50.10  n/a     .000
            overflow <=   1.0 03:JO-OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.5425E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0025:C00434------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N_DE       55194.86  104.140 No_date   39:45   29.33  n/a     .000
                    +     1.0 02:DESIRE        23.78    2.161 No_date   28:03   40.77  n/a     .000
                    +     1.0 02:JO-OVF          .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:JOCK_P       257.63    9.145 No_date   28:37   50.10  n/a     .000
                 SUM=     1.0 01:SN_DE      55476.27  104.765 No_date   39:44   29.43  n/a     .000
R0025:C00435------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_DE      55476.27  104.765 No_date   39:44   29.43  n/a     .000
      fname :SN_DE.0025
      remark:Total Flows at Heart's Desire
#
# Hydrograph from Heart's Desire routed to Rideau River
# Channel X-Section obtained from RVCA Hydraulic Model - Station 0
#
R0025:C00436------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_DE      55476.27  104.765 No_date   39:44   29.43  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N1         55476.27  104.757 No_date   39:48   29.43  n/a     .000
      [L/S/n=  563./ .967/.045]
      {Vmax= 1.941:Dmax= 1.134}
#****************************************************************************
#    Catchment S-2
#    - To Jock River (north and south)
#    - Undeveloped floodplain and river
#****************************************************************************
R0025:C00437------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:S-2          102.94    3.971 No_date   28:20   30.13 .405     .000
      [CN= 72.0: N= 3.00: Tp=  .40]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
R0025:C00438------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N1         55476.27  104.757 No_date   39:48   29.43  n/a     .000
                    +     1.0 02:S-2          102.94    3.971 No_date   28:20   30.13  n/a     .000
                 SUM=     1.0 01:SN_N1      55579.21  104.958 No_date   39:48   29.43  n/a     .000
R0025:C00439------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_N1      55579.21  104.958 No_date   39:48   29.43  n/a     .000
      fname :SN_N1.0025
      remark:Total Flows at Rideau River
############################################################################
  ** END OF RUN :   49

****************************************************************************************************

 RUN#:COMMAND#
R0050:C00001-------------------------------------------------------------------------------------
     START
      [TZERO =    .00 hrs on        0]
      [METOUT=   2    (1=imperial, 2=metric output)]
      [NSTORM=   1 ]
      [NRUN  = 0050 ]
#****************************************************************************
#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
#****************************************************************************
#  Project Name: [Jock River]    Project Number: [1474-16]
#  Date        : 04-03-2021
#  Modeller    : [M.M.]
#  Company     : JFSAinc.
#  License #   :  2549237
#****************************************************************************
# CALIBRATION OF SUMMER MODEL PARAMETERS
# USING CONTINUOUS SIMULATIONS
# Rainfall data from JFSA raingauge installed at site + other gauges by the City
# Use data collected from May 1st to July 14, 2003
# 2020-11-30 change TMJSTO in COMPUTE DUALHYD (TMJSTO = 0.1 instead of 0.0001)
# 2020-12-01 correct pond curve values
# 2020-12-01 change W_CLAR_BRAZ XIMP to 0.55, SLPI=[0.5](%) (impervious slope), and LGI up to 700m
# 2021-02-19 Change the slope for ROUTE CHANNEL Station 2462 (NHYDout=["N_TO"] ,NHYDin=["SN_TO"]) from 0.033 % (as per S
# 2021-02-19 Change the slope for ROUTE CHANNEL Station 5002 (NHYDout=["N_WC"] ,NHYDin=["SN_CE"]) from 0.01 % (as per St
# ---------------------------------------------------------------------------
R0050:C00002-------------------------------------------------------------------------------------
     READ STORM
      Filename = storm.001
      Comment  = Pluie SCS de 24 hres 1:50 ans pour Ottawa CDA
      [SDT=10.00:SDUR=  24.00:PTOT=  81.51]
R0050:C00003-------------------------------------------------------------------------------------
     MODIFY STORM
      [RFACT=  1.00:TSHIFT= 960.00 min]
      [SDT=10.00:SDUR=  40.00:PTOT=  81.51]
R0050:C00004-------------------------------------------------------------------------------------
     DEFAULT VALUES
      Filename = T:\PROJ\1474-16\Design\20201026-QuantityControlAnalysis\SWMHYMO\SMR-Model\updated3\CitiGate.DEF
      ICASEdv  = 1 (read and print data)
      FileTitle= File comment: [Based onvarious calibration exercises in Onta
                 THE FOLLOWING PARAMETERS ARE USED IN THE DESIGN STANDHYD COM
      Horton's infiltration equation parameters:
      [Fo= 76.20 mm/hr] [Fc=13.20 mm/hr] [DCAY= 4.14 /hr] [F=  .00 mm]
      Parameters for PERVIOUS surfaces in STANDHYD:
      [IAper=   4.67 mm] [LGP=50.00 m] [MNP= .250]
      Parameters for IMPERVIOUS surfaces in STANDHYD:
      [IAimp=   1.57 mm] [CLI= 1.50]   [MNI= .013]
      Parameters used in NASHYD:
      [Ia=   4.67 mm] [N= 3.00]
      Average monthly Pan Evaporation data in    (mm)
   JAN   FEB   MAR   APR   MAY   JUN   JUL   AUG   SEP   OCT   NOV   DEC
   .00   .00   .00   .00   .00   .00   .00   .00   .00   .00   .00   .00
      Average monthly Potential Evapotranspiration in    (mm)
   JAN   FEB   MAR   APR   MAY   JUN   JUL   AUG   SEP   OCT   NOV   DEC
   .00   .00   .00   .00   .00   .00   .00   .00   .00   .00   .00   .00
R0050:C00005-------------------------------------------------------------------------------------
     COMPUTE API
      [APIini= 50.00: APIkdy= .8500: APIkdt= .9989]
      {APImax=113.33: APIavg= 67.14: APImin= 44.87}
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.32
R0050:C00006------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:JR_HW       3680.00   18.440 No_date   36:55   30.33 .372     .000
      [CN= 64.0: N= 3.00: Tp= 7.13]
      [IaREC= 4.00: SMIN= 57.05: SMAX=380.32: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.32
R0050:C00007------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_13        971.00    6.937 No_date   32:34   28.27 .347     .000
      [CN= 61.0: N= 3.00: Tp= 3.76]
      [IaREC= 4.00: SMIN= 64.50: SMAX=430.01: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.80
R0050:C00008------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:JR_GWM      3074.00    8.912 No_date   39:59   24.31 .298     .000
      [CN= 55.0: N= 3.00: Tp=11.33]
      [IaREC= 4.00: SMIN= 83.24: SMAX=554.96: SK= .010]
      [InterEventTime=  12.00]
R0050:C00009------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:JR_ASH      1781.00   16.834 No_date   32:39   36.85 .452     .000
      [CN= 72.0: N= 3.00: Tp= 3.91]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
R0050:C00010------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_11        500.00    9.061 No_date   29:21   31.73 .389     .000
      [CN= 66.0: N= 3.00: Tp= 1.24]
      [IaREC= 4.00: SMIN= 52.62: SMAX=350.79: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.80
R0050:C00011------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:NN_CK       1917.00   12.342 No_date   34:26   31.73 .389     .000
      [CN= 66.0: N= 3.00: Tp= 5.29]
      [IaREC= 4.00: SMIN= 52.62: SMAX=350.79: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.52
R0050:C00012------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_10       5666.00   32.402 No_date   37:52   36.85 .452     .000
      [CN= 72.0: N= 3.00: Tp= 8.00]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.75
R0050:C00013------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:KG_CK       8376.00   31.024 No_date   39:59   31.73 .389     .000
      [CN= 66.0: N= 3.00: Tp=11.66]
      [IaREC= 4.00: SMIN= 52.62: SMAX=350.79: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.68
R0050:C00014------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_9        1132.00   14.039 No_date   30:53   35.35 .434     .000
      [CN= 70.0: N= 3.00: Tp= 2.51]
      [IaREC= 4.00: SMIN= 43.07: SMAX=287.10: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.82
R0050:C00015------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:NC_CK       4464.00   15.472 No_date   39:59   28.95 .355     .000
      [CN= 62.0: N= 3.00: Tp=11.32]
      [IaREC= 4.00: SMIN= 61.90: SMAX=412.66: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.80
R0050:C00016------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_8         131.00    2.740 No_date   28:57   29.64 .364     .000
      [CN= 63.0: N= 3.00: Tp=  .90]
      [IaREC= 4.00: SMIN= 59.42: SMAX=396.11: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.65
R0050:C00017------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:HB_DR       3854.00   18.180 No_date   38:32   31.73 .389     .000
      [CN= 66.0: N= 3.00: Tp= 8.42]
      [IaREC= 4.00: SMIN= 52.62: SMAX=350.79: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.82
R0050:C00018------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_7        3197.00   13.937 No_date   36:23   25.61 .314     .000
      [CN= 57.0: N= 3.00: Tp= 6.65]
      [IaREC= 4.00: SMIN= 76.32: SMAX=508.81: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.75
R0050:C00019------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_6         165.00    1.285 No_date   33:02   32.44 .398     .000
      [CN= 67.0: N= 3.00: Tp= 4.18]
      [IaREC= 4.00: SMIN= 50.55: SMAX=336.97: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.67
R0050:C00020------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:VG_DR       1332.00    9.332 No_date   35:12   36.85 .452     .000
      [CN= 72.0: N= 3.00: Tp= 5.95]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
R0050:C00021------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_5         224.00    8.187 No_date   28:45   41.51 .509     .000
      [CN= 77.0: N= 3.00: Tp=  .75]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.20
R0050:C00022------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:FL_CK       4945.00   44.623 No_date   33:18   38.37 .471     .000
      [CN= 74.0: N= 3.00: Tp= 4.45]
      [IaREC= 4.00: SMIN= 36.67: SMAX=244.49: SK= .010]
      [InterEventTime=  12.00]
R0050:C00023------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_5A2        20.00     .943 No_date   28:35   45.60 .560     .000
      [CN= 81.0: N= 3.00: Tp=  .62]
      [IaREC= 4.00: SMIN= 25.21: SMAX=168.09: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.61
R0050:C00024------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_5A1      1412.00    8.794 No_date   37:48   39.93 .490     .000
      [CN= 75.0: N= 3.00: Tp= 8.00]
      [IaREC= 4.00: SMIN= 33.81: SMAX=225.43: SK= .010]
      [InterEventTime=  12.00]
R0050:C00025------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_4         585.00   12.896 No_date   29:55   45.60 .560     .000
      [CN= 81.0: N= 3.00: Tp= 1.75]
      [IaREC= 4.00: SMIN= 25.21: SMAX=168.09: SK= .010]
      [InterEventTime=  12.00]
R0050:C00026------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:LM_CK       1021.00   17.059 No_date   30:46   44.77 .549     .000
      [CN= 80.0: N= 3.00: Tp= 2.46]
      [IaREC= 4.00: SMIN= 26.32: SMAX=175.50: SK= .010]
      [InterEventTime=  12.00]
R0050:C00027------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_2         177.00    6.469 No_date   28:45   41.51 .509     .000
      [CN= 77.0: N= 3.00: Tp=  .75]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0050:C00028------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SM_DR       1122.00   15.544 No_date   31:43   45.60 .560     .000
      [CN= 81.0: N= 3.00: Tp= 3.25]
      [IaREC= 4.00: SMIN= 25.21: SMAX=168.09: SK= .010]
      [InterEventTime=  12.00]
R0050:C00029------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:MO_DR       2737.00   34.946 No_date   31:29   40.72 .500     .000
      [CN= 76.0: N= 3.00: Tp= 3.03]
      [IaREC= 4.00: SMIN= 32.46: SMAX=216.39: SK= .010]
      [InterEventTime=  12.00]
#
# Routing hydrographs
#
# Starting with the addition of Jock River Headwater and Subwatershed 13
#
R0050:C00030------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:JR_HW       3680.00   18.440 No_date   36:55   30.33  n/a     .000
                    +     1.0 02:SW_13        971.00    6.937 No_date   32:34   28.27  n/a     .000
                 SUM=     1.0 01:S_N13       4651.00   23.559 No_date   35:24   29.90  n/a     .000
#
# Sum of hydrographs from Node 13 routed to Node 13A
# (Approximated cross-section - see cross-section 258)
# Use n=0.04 for summer conditions and n=0.025 for spring conditions
#
R0050:C00031------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N13       4651.00   23.559 No_date   35:24   29.90  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N13A        4651.00   19.136 No_date   39:06   29.90  n/a     .000
      [L/S/n= 9074./ .022/.040]
      {Vmax=  .574:Dmax= 3.920}
#
# Addition of Subwatershed Jock River at Goodwood Marsh to Node 13A
#
R0050:C00032------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N13A        4651.00   19.136 No_date   39:06   29.90  n/a     .000
                    +     1.0 02:JR_GWM      3074.00    8.912 No_date   39:59   24.31  n/a     .000
                 SUM=     1.0 01:SN13A       7725.00   27.939 No_date   39:54   27.68  n/a     .000
#
# Insertion of a reservoir to simulate the effects of the Goodwood Marsh
#
R0050:C00033------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:SN13A       7725.00   27.939 No_date   39:54   27.68  n/a     .000
                 out <=   1.0 01:RES_GM      7725.00    3.808 No_date   61:35   27.67  n/a     .000
     {MxStoUsed=.1481E+03  m3}
#
R0050:C00034------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:RES_GM      7725.00    3.808 No_date   61:35   27.67  n/a     .000
      fname :H_RESGM
      remark:Outflow from Res GM
# Output of Reservoir Goodwood Marsh routed from Node 13A to Node 12
# (Approximated cross-section - see cross-section 258)
# Use n=0.04 for summer conditions and n=0.025 for spring conditions
R0050:C00035------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:RES_GM      7725.00    3.808 No_date   61:35   27.67  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N12         7725.00    3.804 No_date   64:19   27.68  n/a     .000
      [L/S/n= 5926./ .076/.040]
      {Vmax=  .556:Dmax= 1.541}
#
```

```
# Addition of Subwatershed Jock River at Ashton to Node 12
#
R0050:C00036------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                 1.0 02:N12          7725.00    3.804 No_date   64:19   27.68  n/a     .000
                     +      1.0 02:JR_ASH       1781.00   16.834 No_date   32:39   36.85  n/a     .000
                  SUM=      1.0 01:S_N12        9506.00   18.867 No_date   32:42   29.39  n/a     .000
R0050:C00037------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD                1.0 01:S_N12        9506.00   18.867 No_date   32:42   29.39  n/a     .000
      fname :H_SN12
      remark:flow at S_N12 near Ashton
#
# Sum of hydrographs from Node 12 routed to Node 11
# (Approximated cross-section - see cross-section 258)
# Use n=0.04 for summer conditions and n=0.025 for spring conditions
#
# Sum of hydrographs from Node 12 routed to Node 11 with Dummy section 248
#
R0050:C00038------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->      1.0 02:S_N12        9506.00   18.867 No_date   32:42   29.39  n/a     .000
     [RDT= 1.00] out<-      1.0 01:Dum11        9506.00   18.687 No_date   32:59   29.39  n/a     .000
      [L/S/n=  972./ .054/.040]
      {Vmax=  .751:Dmax= 3.029}
#
# Addition of Subwatershed 11 and No Name Creek to Node 11
#
R0050:C00039------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                 1.0 02:Dum11        9506.00   18.687 No_date   32:59   29.39  n/a     .000
                     +      1.0 02:SW_11         500.00    9.061 No_date   29:21   31.73  n/a     .000
                     +      1.0 02:NN_CK        1917.00   12.342 No_date   34:26   31.73  n/a     .000
                  SUM=      1.0 01:S_N11       11923.00   32.851 No_date   33:00   29.87  n/a     .000
#
# Sum of hydrographs from Node 11 routed to Node 10
# Section 1
#
R0050:C00040------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->      1.0 02:S_N11       11923.00   32.851 No_date   33:00   29.87  n/a     .000
     [RDT= 1.00] out<-      1.0 01:N10         11923.00   20.490 No_date   40:02   29.87  n/a     .000
      [L/S/n=14028./ .157/.040]
      {Vmax=  .474:Dmax= 1.423}
#
# Addition of Subwatershed 10 to Node 10
#
R0050:C00041------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                 1.0 02:N10         11923.00   20.490 No_date   40:02   29.87  n/a     .000
                     +      1.0 02:SW_10        5666.00   32.402 No_date   37:52   36.85  n/a     .000
                  SUM=      1.0 01:S_N10       17589.00   52.600 No_date   38:19   32.12  n/a     .000
R0050:C00042------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD                1.0 01:S_N10       17589.00   52.600 No_date   38:19   32.12  n/a     .000
      fname :H_SN10
      remark:flow at S_N10: N10 + SW_10
# Addition of Kings Creek to S_N10
#
R0050:C00043------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                 1.0 02:S_N10       17589.00   52.600 No_date   38:19   32.12  n/a     .000
                     +      1.0 02:KG_CK        8376.00   31.024 No_date   39:59   31.73  n/a     .000
                  SUM=      1.0 01:S_N10A      25965.00   82.746 No_date   39:45   31.99  n/a     .000
#
# Sum of hydrographs from Node 10 routed to Node 9
# Section 2
#
R0050:C00044------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->      1.0 02:S_N10A      25965.00   82.746 No_date   39:45   31.99  n/a     .000
     [RDT= 1.00] out<-      1.0 01:N9          25965.00   80.980 No_date   39:59   31.99  n/a     .000
      [L/S/n= 3982./ .075/.040]
      {Vmax=  .744:Dmax= 2.015}
#
# Addition of Subwatershed 9 and Nichols Creek to Node 9
#
R0050:C00045------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                 1.0 02:N9          25965.00   80.980 No_date   39:59   31.99  n/a     .000
                     +      1.0 02:SW_9         1132.00   14.039 No_date   30:53   35.35  n/a     .000
                     +      1.0 02:NC_CK        4464.00   15.472 No_date   39:59   28.95  n/a     .000
                  SUM=      1.0 01:S_N9        31561.00   99.424 No_date   39:59   31.68  n/a     .000
#
# Sum of hydrographs from Node 9 routed to Node 8
# Section 3
#
R0050:C00046------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->      1.0 02:S_N9        31561.00   99.424 No_date   39:59   31.68  n/a     .000
     [RDT= 1.00] out<-      1.0 01:N8          31561.00   93.665 No_date   39:59   31.68  n/a     .000
      [L/S/n= 2269./ .088/.045]
      {Vmax=  .367:Dmax= 1.834}
#
# Addition of Subwatershed 8 and Hobb's Drain to Node 8
#
R0050:C00047------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                 1.0 02:N8          31561.00   93.665 No_date   39:59   31.68  n/a     .000
                     +      1.0 02:SW_8          131.00    2.740 No_date   28:57   29.64  n/a     .000
                     +      1.0 02:HB_DR        3854.00   18.180 No_date   38:32   31.73  n/a     .000
                  SUM=      1.0 01:S_N8        35546.00  111.843 No_date   39:59   31.68  n/a     .000
#
# Sum of hydrographs from Node 8 routed to Node 7
# Section 4
#
R0050:C00048------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->      1.0 02:S_N8        35546.00  111.843 No_date   39:59   31.68  n/a     .000
     [RDT= 1.00] out<-      1.0 01:N7          35546.00   95.475 No_date   44:55   31.68  n/a     .000
      [L/S/n= 3750./ .053/.070]
      {Vmax=  .231:Dmax= 2.290}
#
# Addition of Subwatershed 7 to Node 7
#
R0050:C00049------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                 1.0 02:N7          35546.00   95.475 No_date   44:55   31.68  n/a     .000
                     +      1.0 02:SW_7         3197.00   13.937 No_date   36:23   25.61  n/a     .000
                  SUM=      1.0 01:S_N7        38743.00  102.892 No_date   43:46   31.18  n/a     .000
R0050:C00050------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD                1.0 01:S_N7        38743.00  102.892 No_date   43:46   31.18  n/a     .000
      fname :H_SN7
      remark:flow at S_N7: N7 + SW_7
# Insertion of a reservoir to simulate the effects of the Richmond Fen.
# Storage area and volumes were estimated from available topo maps.
# Release rate from fen was assumed to be controlled by the downstream
# river cross-section for summer conditions.  It is was assumed that for up to
# 0.75 m of water, the main channel of the river provided the storage.  Above
# this depth, the wetland starts to signigicantly store water.
#
R0050:C00051------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->      1.0 02:S_N7        38743.00  102.892 No_date   43:46   31.18  n/a     .000
                 out <=     1.0 01:RES_RF      38743.00   52.029 No_date   59:07   31.18  n/a     .000
     {MxStoUsed=.4394E+03  m3}
R0050:C00052------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD                1.0 01:RES_RF      38743.00   52.029 No_date   59:07   31.18  n/a     .000
      fname :H_ResRF
      remark:outflow of Richmond Fen
#
# Sum of hydrographs from Node 7 routed to Node 6
# Section 5
#
R0050:C00053------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->      1.0 02:RES_RF      38743.00   52.029 No_date   59:07   31.18  n/a     .000
     [RDT= 1.00] out<-      1.0 01:N6          38743.00   51.784 No_date   60:27   31.18  n/a     .000
      [L/S/n= 3056./ .082/.025]
      {Vmax=  .538:Dmax= 1.253}
#
# Addition of Subwatershed 6 and Van Gaal Drain to Node 6
#
R0050:C00054------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                 1.0 02:N6          38743.00   51.784 No_date   60:27   31.18  n/a     .000
                     +      1.0 02:SW_6          165.00    1.285 No_date   33:02   32.44  n/a     .000
                     +      1.0 02:VG_DR        1332.00    9.332 No_date   35:12   36.85  n/a     .000
                  SUM=      1.0 01:S_N6        40240.01   51.810 No_date   60:20   31.37  n/a     .000
#
# Sum of hydrographs from Node 6 routed to Node 5
# Section 6
#
R0050:C00055------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->      1.0 02:S_N6        40240.01   51.810 No_date   60:20   31.37  n/a     .000
     [RDT= 1.00] out<-      1.0 01:N5          40240.01   51.693 No_date   61:06   31.37  n/a     .000
      [L/S/n= 1852./ .054/.035]
      {Vmax=  .469:Dmax= 1.351}
#
# Addition of Subwatershed 5 and Flowing Creek to Node 5
#
R0050:C00056------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                 1.0 02:N5          40240.01   51.693 No_date   61:06   31.37  n/a     .000
                     +      1.0 02:SW_5          224.00    8.187 No_date   28:45   41.51  n/a     .000
                     +      1.0 02:FL_CK        4945.00   44.623 No_date   33:18   38.37  n/a     .000
                  SUM=      1.0 01:S_N5        45409.01   71.514 No_date   34:20   32.18  n/a     .000
#
# Sum of hydrographs from Node 5 routed to Node 5A
# Section 7
#
R0050:C00057------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->      1.0 02:S_N5        45409.01   71.514 No_date   34:20   32.18  n/a     .000
     [RDT= 1.00] out<-      1.0 01:N5A         45409.01   71.311 No_date   34:15   32.18  n/a     .000
      [L/S/n=  556./ .090/.040]
      {Vmax=  .530:Dmax= 1.290}
#
# Addition of Subwatershed 5A1 and Subwatershed 5A2 to Node 5A
#
R0050:C00058------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                 1.0 02:N5A         45409.01   71.311 No_date   34:15   32.18  n/a     .000
                     +      1.0 02:SW_5A2         20.00     .943 No_date   28:35   45.60  n/a     .000
                     +      1.0 02:SW_5A1       1412.00    8.794 No_date   37:48   39.93  n/a     .000
                  SUM=      1.0 01:S_N5A       46841.01   79.247 No_date   34:46   32.42  n/a     .000
#
# Sum of hydrographs from Node 5A routed to Node 4
# Section 8
#
R0050:C00059------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->      1.0 02:S_N5A       46841.01   79.247 No_date   34:46   32.42  n/a     .000
     [RDT= 1.00] out<-      1.0 01:N4          46841.01   75.833 No_date   36:02   32.42  n/a     .000
      [L/S/n= 4630./ .043/.035]
      {Vmax=  .874:Dmax= 3.702}
#
# Addition of Subwatershed 4 and Leamy Creek to Node 4
#
R0050:C00060------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                 1.0 02:N4          46841.01   75.833 No_date   36:02   32.42  n/a     .000
                     +      1.0 02:SW_4          585.00   12.896 No_date   29:55   45.60  n/a     .000
                     +      1.0 02:LM_CK        1021.00   17.059 No_date   30:46   44.77  n/a     .000
                  SUM=      1.0 01:S_N4        48447.00   84.908 No_date   35:20   32.84  n/a     .000
R0050:C00061------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD                1.0 01:S_N4        48447.00   84.908 No_date   35:20   32.84  n/a     .000
      fname :S_N4.0050
      remark:flow at S_N4
#
# Sum of hydrographs from Node 4 routed to Node 2
# Section 9
#
R0050:C00062------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->      1.0 02:S_N4        48447.00   84.908 No_date   35:20   32.84  n/a     .000
     [RDT= 1.00] out<-      1.0 01:N2          48447.00   84.582 No_date   35:30   32.84  n/a     .000
      [L/S/n= 1667./ .060/.040]
      {Vmax=  .909:Dmax= 3.749}
#
# Addition of Subwatershed 2 with Monohan Drain and Smith Drain to Node 2
#
R0050:C00063------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                 1.0 02:N2          48447.00   84.582 No_date   35:30   32.84  n/a     .000
                     +      1.0 02:SW_2          177.00    6.469 No_date   28:45   41.51  n/a     .000
                     +      1.0 02:SM_DR        1122.00   15.544 No_date   31:43   45.60  n/a     .000
                     +      1.0 02:MO_DR        2737.00   34.946 No_date   31:29   40.72  n/a     .000
                  SUM=      1.0 01:S_N2        52483.00  124.249 No_date   32:52   33.56  n/a     .000
R0050:C00064------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD                1.0 01:S_N2        52483.00  124.249 No_date   32:52   33.56  n/a     .000
      fname :H_SN2
      remark:flow at S_N2 Jock River Gauge at Moodie Dr.
#
# Sum of hydrographs from Node 2 routed to Node 1
# Section 10
#
#***************************************************************************
#
# Hydrograph from Node 2 routed to Node 416
# Channel X-Section obtained from RVCA Hydraulic Model - Station 9025
#
R0050:C00065------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->      1.0 02:S_N2        52483.00  124.249 No_date   32:52   33.56  n/a     .000
     [RDT= 1.00] out<-      1.0 01:N_416       52483.00  120.589 No_date   33:57   33.56  n/a     .000
      [L/S/n= 2327./ .050/.055]
      {Vmax=  .781:Dmax= 3.561}
#***************************************************************************
#    Catchment SW-1a
#    - Portion of RVCA catchment SW_1 outside of Reach 1 subwatershed
#    - Undeveloped agricultural land
#***************************************************************************
R0050:C00066------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD       1.0 01:SW_1a          536.42    6.175 No_date   31:15   35.39 .434     .000
      [CN= 72.0: N= 3.00: Tp= 2.79]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
R0050:C00067------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-Okeefe    44.93    7.341 No_date   28:03   63.95 .785     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .75:LGI= 547.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0050:C00068------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD         1.0 01:S-1-Okeefe    44.93    7.341 No_date   28:03   63.95  n/a     .000
     Major System   /       1.0 02:S-1-OkMJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \       1.0 03:S-1-OkMN      44.93    4.591 No_date   27:54   64.28  n/a     .000
      {MjSysSto=.1733E+04, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00069------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                 1.0 02:S-1-OkMJ        .00     .000 No_date    0:00     .00  n/a     .000
                     +      1.0 02:S-1-OkMN      44.93    4.591 No_date   27:54   64.28  n/a     .000
                  SUM=      1.0 01:S-1-OkS       44.93    4.591 No_date   27:54   64.28  n/a     .000
R0050:C00070------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->      1.0 02:S-1-OkS       44.93    4.591 No_date   27:54   64.28  n/a     .000
                 out <=     1.0 01:S-1-OkSR      44.93     .521 No_date   29:25   64.28  n/a     .000
            overflow <=     1.0 03:S-1-OkSovf      .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.1739E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00071------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                 1.0 02:N_416       52483.00  120.589 No_date   33:57   33.56  n/a     .000
                     +      1.0 02:SW_1a        536.42    6.175 No_date   31:15   35.39  n/a     .000
                     +      1.0 02:S-1-OkSR      44.93     .521 No_date   29:25   64.28  n/a     .000
                     +      1.0 02:S-1-OkSovf      .00     .000 No_date    0:00     .00  n/a     .000
                  SUM=      1.0 01:SN_416      53064.36  125.710 No_date   33:19   33.60  n/a     .000
R0050:C00072------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD                1.0 01:SN_416      53064.36  125.710 No_date   33:19   33.60  n/a     .000
      fname :SN_416.0050
      remark:Total Flows at Highway 416 before Station 7245
#
# Hydrograph from Node 416 routed to Node at Okeefe drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 7245
#
R0050:C00073------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->      1.0 02:SN_416      53064.36  125.710 No_date   33:19   33.60  n/a     .000
     [RDT= 1.00] out<-      1.0 01:N_OK        53064.36  125.608 No_date   33:43   33.60  n/a     .000
      [L/S/n=  497./ .302/.055]
      {Vmax= 1.650:Dmax= 3.041}
#***************************************************************************
#    Catchment OKEEFE
#    - To O'Keefe drain (north of the Jock)
#    - Developed with assumed 43% imp.
#    - 2020-12-01 add Okeefe model (Area 513.02 HA) instead of current Okeefe (Area 513.02 HA)
#    - 2020-11-20 Okeefe detailed model was added as per the NOVATECH SWMHYMO model (Citi-Gate 2014).
#***************************************************************************
R0050:C00074------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD       1.0 01:O-1             63.72    1.147 No_date   28:58   26.31 .323     .000
      [CN= 61.0: N= 3.00: Tp=  .90]
      [IaREC= 4.00: SMIN= 64.50: SMAX=430.01: SK= .010]
      [InterEventTime=  12.00]
R0050:C00075------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->      1.0 02:O-1             63.72    1.147 No_date   28:58   26.31  n/a     .000
     [RDT= 1.00] out<-      1.0 01:O-1R            63.72    1.084 No_date   29:14   26.31  n/a     .000
      [L/S/n=  960./ .630/.043]
      {Vmax=  .880:Dmax=  .445}
R0050:C00076------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD       1.0 01:O-2             28.61     .404 No_date   29:13   24.30 .298     .000
      [CN= 57.0: N= 3.00: Tp= 1.10]
      [IaREC= 4.00: SMIN= 76.32: SMAX=508.81: SK= .010]
      [InterEventTime=  12.00]
R0050:C00077------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD       1.0 01:O-4             46.94     .531 No_date   29:00   18.55 .228     .000
      [CN= 49.0: N= 3.00: Tp=  .90]
      [IaREC= 4.00: SMIN=104.59: SMAX=697.25: SK= .010]
      [InterEventTime=  12.00]
R0050:C00078------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                 1.0 02:O-1R            63.72    1.084 No_date   29:14   26.31  n/a     .000
                     +      1.0 02:O-2             28.61     .404 No_date   29:13   24.30  n/a     .000
                     +      1.0 02:O-4             46.94     .531 No_date   29:00   18.55  n/a     .000
                  SUM=      1.0 01:OKF-N          139.27    2.005 No_date   29:11   23.28  n/a     .000
R0050:C00079------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->      1.0 02:OKF-N          139.27    2.005 No_date   29:11   23.28  n/a     .000
     [RDT= 1.00] out<-      1.0 01:OKF-NR         139.27    2.004 No_date   29:13   23.28  n/a     .000
      [L/S/n=  210./ .810/.043]
      {Vmax= 1.081:Dmax=  .751}
R0050:C00080------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD       1.0 01:O-6             16.46     .179 No_date   28:45   15.94 .196     .000
      [CN= 43.0: N= 3.00: Tp=  .70]
      [IaREC= 4.00: SMIN=134.47: SMAX=896.47: SK= .010]
      [InterEventTime=  12.00]
R0050:C00081------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:O-3             39.67    1.212 No_date   28:22   28.54 .350     .000
      [XIMP=.15:TIMP=.30]
      [LOSS= 2 :CN= 50.0]
      [Pervious     area: IAper= 4.67:SLPP= .32:LGP= 440.:MNP=.035:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .32:LGI=1880.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 99.77: SMAX=665.12: SK= .010]
R0050:C00082------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:O-5             60.63    3.085 No_date   28:10   32.89 .403     .000
      [XIMP=.13:TIMP=.26]
      [LOSS= 2 :CN= 61.0]
      [Pervious     area: IAper= 4.67:SLPP=1.38:LGP= 550.:MNP=.035:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.38:LGI=1450.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 64.50: SMAX=430.01: SK= .010]
R0050:C00083------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                 1.0 02:OKF-NR         139.27    2.004 No_date   29:13   23.28  n/a     .000
                     +      1.0 02:O-3             39.67    1.212 No_date   28:22   28.54  n/a     .000
                     +      1.0 02:O-5             60.63    3.085 No_date   28:10   32.89  n/a     .000
                     +      1.0 02:O-6             16.46     .179 No_date   28:45   15.94  n/a     .000
                  SUM=      1.0 01:PT1            256.03    4.968 No_date   28:20   25.90  n/a     .000
R0050:C00084------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD       1.0 01:O-7              5.28     .096 No_date   28:37   21.46 .263     .000
      [CN= 54.0: N= 3.00: Tp=  .60]
      [IaREC= 4.00: SMIN= 87.01: SMAX=580.07: SK= .010]
      [InterEventTime=  12.00]
R0050:C00085------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                 1.0 02:PT1            256.03    4.968 No_date   28:20   25.90  n/a     .000
                     +      1.0 02:O-7              5.28     .096 No_date   28:37   21.46  n/a     .000
                  SUM=      1.0 01:FF             261.31    5.051 No_date   28:20   25.81  n/a     .000
R0050:C00086------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->      1.0 02:FF             261.31    5.051 No_date   28:20   25.81  n/a     .000
     [RDT= 1.00] out<-      1.0 01:DRAIN1         261.31    4.883 No_date   28:25   25.81  n/a     .000
      [L/S/n=  302./1.000/.043]
      {Vmax=  .822:Dmax=  .759}
R0050:C00087------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD       1.0 01:D1               1.17     .094 No_date   28:12   43.70 .536     .000
      [CN= 84.0: N= 3.00: Tp=  .28]
      [IaREC= 4.00: SMIN= 21.09: SMAX=140.62: SK= .010]
      [InterEventTime=  12.00]
R0050:C00088------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A1               2.50     .517 No_date   28:01   64.42 .790     .000
      [XIMP=.68:TIMP=.85]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 224.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
```

```
R0050:C00089------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE RESERVOIR ->    1.0 02:A1             2.50     .517 No_date   28:01   64.42  n/a     .000
                 out <=    1.0 01:A1-STR         2.50     .146 No_date   28:19   64.42  n/a     .000
            overflow <=    1.0 03:A1-OVF          .00     .000 No_date    0:00     .00  n/a     .000
       {MxStoUsed=.7243E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00090------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:ST-2            .59     .103 No_date   28:00   50.67 .622     .000
        [XIMP=.46:TIMP=.57]
        [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
        [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
        [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 109.:MNI=.013:SCI=   .0]
        [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00091------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE RESERVOIR ->    1.0 02:ST-2            .59     .103 No_date   28:00   50.67  n/a     .000
                 out <=    1.0 01:ST2STR          .59     .052 No_date   28:11   50.67  n/a     .000
            overflow <=    1.0 03:ST2OVF          .00     .000 No_date    0:00     .00  n/a     .000
       {MxStoUsed=.3952E-02  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00092------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS NASHYD     1.0 01:O-8           60.55    1.383 No_date   29:04   33.66 .413     .000
        [CN= 69.0: N= 3.00: Tp= 1.00]
        [IaREC= 4.00: SMIN= 44.82: SMAX=298.82: SK= .010]
        [InterEventTime=  12.00]
R0050:C00093------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE PIPE      ->    1.0 02:O-8           60.55    1.383 No_date   29:04   33.66  n/a     .000
       [RDT= 1.00] out<-   1.0 01:O8PIPE        60.55    1.376 No_date   29:07   33.66  n/a     .000
        [L/S/n=  335./ .100/.013]
        {Vmax= 1.244:Dmax=  .617}
        {HGTH= 1.20:WDTH= 1.80}
R0050:C00094------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:DRAIN1       261.31    4.883 No_date   28:25   25.81  n/a     .000
                    +      1.0 02:D1             1.17     .094 No_date   28:12   43.70  n/a     .000
                    +      1.0 02:A1-STR         2.50     .146 No_date   28:19   64.42  n/a     .000
                    +      1.0 02:A1-OVF          .00     .000 No_date    0:00     .00  n/a     .000
                    +      1.0 02:ST2STR          .59     .052 No_date   28:11   50.67  n/a     .000
                    +      1.0 02:ST2OVF          .00     .000 No_date    0:00     .00  n/a     .000
                    +      1.0 02:O8PIPE        60.55    1.376 No_date   29:07   33.66  n/a     .000
                 SUM=      1.0 01:ST2-IN       326.12    6.061 No_date   28:35   27.67  n/a     .000
R0050:C00095------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:A7             3.51     .704 No_date   28:01   64.42 .790     .000
        [XIMP=.68:TIMP=.85]
        [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
        [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
        [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 265.:MNI=.013:SCI=   .0]
        [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00096------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE RESERVOIR ->    1.0 02:A7             3.51     .704 No_date   28:01   64.42  n/a     .000
                 out <=    1.0 01:A7-STR         3.51     .199 No_date   28:21   64.42  n/a     .000
            overflow <=    1.0 03:A7-OVF          .00     .000 No_date    0:00     .00  n/a     .000
       {MxStoUsed=.1019E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00097------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:ST-3            .71     .123 No_date   28:00   50.67 .622     .000
        [XIMP=.46:TIMP=.57]
        [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
        [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
        [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 119.:MNI=.013:SCI=   .0]
        [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00098------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE RESERVOIR ->    1.0 02:ST-3            .71     .123 No_date   28:00   50.67  n/a     .000
                 out <=    1.0 01:ST3STR          .71     .063 No_date   28:11   50.67  n/a     .000
            overflow <=    1.0 03:ST3OVF          .00     .000 No_date    0:00     .00  n/a     .000
       {MxStoUsed=.4527E-02  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00099------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:ST2-IN       326.12    6.061 No_date   28:35   27.67  n/a     .000
                    +      1.0 02:A7-STR         3.51     .199 No_date   28:21   64.42  n/a     .000
                    +      1.0 02:A7-OVF          .00     .000 No_date    0:00     .00  n/a     .000
                    +      1.0 02:ST3STR          .71     .063 No_date   28:11   50.67  n/a     .000
                    +      1.0 02:ST3OVF          .00     .000 No_date    0:00     .00  n/a     .000
                 SUM=      1.0 01:PT2ST3       330.34    6.299 No_date   28:33   28.11  n/a     .000
R0050:C00100------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE CHANNEL   ->    1.0 02:PT2ST3       330.34    6.299 No_date   28:33   28.11  n/a     .000
       [RDT= 1.00] out<-   1.0 01:DRAIN2       330.34    5.789 No_date   28:58   28.11  n/a     .000
        [L/S/n=  592./ .230/.043]
        {Vmax=  .593:Dmax= 1.152}
R0050:C00101------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS NASHYD     1.0 01:D2             2.28     .074 No_date   29:02   43.70 .536     .000
        [CN= 84.0: N= 3.00: Tp=  .99]
        [IaREC= 4.00: SMIN= 21.09: SMAX=140.62: SK= .010]
        [InterEventTime=  12.00]
R0050:C00102------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:A17           12.04    2.163 No_date   28:03   64.42 .790     .000
        [XIMP=.68:TIMP=.85]
        [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
        [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
        [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 491.:MNI=.013:SCI=   .0]
        [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00103------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE RESERVOIR ->    1.0 02:A17           12.04    2.163 No_date   28:03   64.42  n/a     .000
                 out <=    1.0 01:A17STR        12.04     .654 No_date   28:27   64.42  n/a     .000
            overflow <=    1.0 03:A17OVF          .00     .000 No_date    0:00     .00  n/a     .000
       {MxStoUsed=.3445E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00104------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:ST-4            .35     .063 No_date   28:00   50.67 .622     .000
        [XIMP=.46:TIMP=.57]
        [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
        [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
        [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=  84.:MNI=.013:SCI=   .0]
        [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00105------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE RESERVOIR ->    1.0 02:ST-4            .35     .063 No_date   28:00   50.67  n/a     .000
                 out <=    1.0 01:ST4STR          .35     .031 No_date   28:10   50.67  n/a     .000
            overflow <=    1.0 03:ST4OVF          .00     .000 No_date    0:00     .00  n/a     .000
       {MxStoUsed=.2719E-02  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00106------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:A18            5.30    1.036 No_date   28:01   64.42 .790     .000
        [XIMP=.68:TIMP=.85]
        [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
        [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
        [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 326.:MNI=.013:SCI=   .0]
        [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00107------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE RESERVOIR ->    1.0 02:A18            5.30    1.036 No_date   28:01   64.42  n/a     .000
                 out <=    1.0 01:A18STR         5.30     .300 No_date   28:22   64.42  n/a     .000
            overflow <=    1.0 03:A18OVF          .00     .000 No_date    0:00     .00  n/a     .000
       {MxStoUsed=.1532E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00108------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:DRAIN2       330.34    5.789 No_date   28:58   28.11  n/a     .000
                    +      1.0 02:D2             2.28     .074 No_date   29:02   43.70  n/a     .000
                    +      1.0 02:A17STR        12.04     .654 No_date   28:27   64.42  n/a     .000
                    +      1.0 02:A17OVF          .00     .000 No_date    0:00     .00  n/a     .000
                    +      1.0 02:ST4STR          .35     .031 No_date   28:10   50.67  n/a     .000
                    +      1.0 02:ST4OVF          .00     .000 No_date    0:00     .00  n/a     .000
                    +      1.0 02:A18STR         5.30     .300 No_date   28:22   64.42  n/a     .000
                    +      1.0 02:A18OVF          .00     .000 No_date    0:00     .00  n/a     .000
                 SUM=      1.0 01:PT3ST4       350.31    6.632 No_date   28:55   30.03  n/a     .000
R0050:C00109------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE CHANNEL   ->    1.0 02:PT3ST4       350.31    6.632 No_date   28:55   30.03  n/a     .000
       [RDT= 1.00] out<-   1.0 01:DRAIN3       350.31    6.350 No_date   29:11   30.03  n/a     .000
        [L/S/n=  525./ .230/.043]
        {Vmax=  .613:Dmax= 1.197}
R0050:C00110------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS NASHYD     1.0 01:D3             2.51     .113 No_date   28:43   47.27 .580     .000
        [CN= 86.0: N= 3.00: Tp=  .73]
        [IaREC= 4.00: SMIN= 17.43: SMAX=116.21: SK= .010]
        [InterEventTime=  12.00]
R0050:C00111------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:C1             3.41     .690 No_date   28:01   64.42 .790     .000
        [XIMP=.68:TIMP=.85]
        [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
        [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
        [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 261.:MNI=.013:SCI=   .0]
        [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00112------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE RESERVOIR ->    1.0 02:C1             3.41     .690 No_date   28:01   64.42  n/a     .000
                 out <=    1.0 01:C1-STR         3.41     .194 No_date   28:20   64.42  n/a     .000
            overflow <=    1.0 03:C1-OVF          .00     .000 No_date    0:00     .00  n/a     .000
       {MxStoUsed=.9900E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00113------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:ST-5            .45     .079 No_date   28:00   50.67 .622     .000
        [XIMP=.46:TIMP=.57]
        [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
        [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
        [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=  95.:MNI=.013:SCI=   .0]
        [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00114------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE RESERVOIR ->    1.0 02:ST-5            .45     .079 No_date   28:00   50.67  n/a     .000
                 out <=    1.0 01:ST5STR          .45     .040 No_date   28:10   50.67  n/a     .000
            overflow <=    1.0 03:ST5OVF          .00     .000 No_date    0:00     .00  n/a     .000
       {MxStoUsed=.3164E-02  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00115------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:DRAIN3       350.31    6.350 No_date   29:11   30.03  n/a     .000
                    +      1.0 02:D3             2.51     .113 No_date   28:43   47.27  n/a     .000
                    +      1.0 02:C1-STR         3.41     .194 No_date   28:20   64.42  n/a     .000
                    +      1.0 02:C1-OVF          .00     .000 No_date    0:00     .00  n/a     .000
                    +      1.0 02:ST5STR          .45     .040 No_date   28:10   50.67  n/a     .000
                    +      1.0 02:ST5OVF          .00     .000 No_date    0:00     .00  n/a     .000
                 SUM=      1.0 01:ST5-E        356.68    6.575 No_date   29:09   30.51  n/a     .000
R0050:C00116------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:STRAND         7.59    1.038 No_date   28:09   62.95 .772     .000
        [XIMP=.64:TIMP=.85]
        [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
        [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  40.:MNP=.250:SCP=   .0]
        [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1230.:MNI=.013:SCI=   .0]
        [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00117------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE RESERVOIR ->    1.0 02:STRAND         7.59    1.038 No_date   28:09   62.95  n/a     .000
                 out <=    1.0 01:S-POND         7.59     .137 No_date   29:13   62.95  n/a     .000
            overflow <=    1.0 03:S-OVF           .00     .000 No_date    0:00     .00  n/a     .000
       {MxStoUsed=.3159E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00118------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:ST5-E        356.68    6.575 No_date   29:09   30.51  n/a     .000
                    +      1.0 02:S-POND         7.59     .137 No_date   29:13   62.95  n/a     .000
                    +      1.0 02:S-OVF           .00     .000 No_date    0:00     .00  n/a     .000
                 SUM=      1.0 01:SSAOUT       364.27    6.711 No_date   29:09   31.19  n/a     .000
R0050:C00119------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     SAVE HYD              1.0 01:SSAOUT       364.27    6.711 No_date   29:09   31.19  n/a     .000
        fname :SSAOUT.0050
        remark:SSAOUT
R0050:C00120------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:Area-A        66.75    8.917 No_date   28:08   61.83 .759     .000
        [XIMP=.64:TIMP=.80]
        [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
        [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
        [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1155.:MNI=.013:SCI=   .0]
        [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00121------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     SAVE HYD              1.0 01:Area-A        66.75    8.917 No_date   28:08   61.83  n/a     .000
        fname :Area-A.0050
        remark:SMWF-A Inflow
R0050:C00122------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE RESERVOIR ->    1.0 02:Area-A        66.75    8.917 No_date   28:08   61.83  n/a     .000
                 out <=    1.0 01:SWMF-A        66.75    1.070 No_date   29:16   61.83  n/a     .000
            overflow <=    1.0 03:SWMAOV          .00     .000 No_date    0:00     .00  n/a     .000
       {MxStoUsed=.2845E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00123------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     SAVE HYD              1.0 01:SWMF-A        66.75    1.070 No_date   29:16   61.83  n/a     .000
        fname :SWMF-A.0050
        remark:SMWF-A Outflow
R0050:C00124------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:SSAOUT       364.27    6.711 No_date   29:09   31.19  n/a     .000
                    +      1.0 02:SWMF-A        66.75    1.070 No_date   29:16   61.83  n/a     .000
                    +      1.0 02:SWMAOV          .00     .000 No_date    0:00     .00  n/a     .000
                 SUM=      1.0 01:PT4ST5       431.02    7.776 No_date   29:10   35.93  n/a     .000
R0050:C00125------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:C6             1.87     .395 No_date   28:01   64.42 .790     .000
        [XIMP=.68:TIMP=.85]
        [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
        [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
        [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 193.:MNI=.013:SCI=   .0]
        [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00126------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE RESERVOIR ->    1.0 02:C6             1.87     .395 No_date   28:01   64.42  n/a     .000
                 out <=    1.0 01:C6-STR         1.87     .110 No_date   28:18   64.42  n/a     .000
            overflow <=    1.0 03:C6-OVF          .00     .000 No_date    0:00     .00  n/a     .000
       {MxStoUsed=.5452E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00127------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:C7             1.62     .347 No_date   28:00   64.42 .790     .000
        [XIMP=.68:TIMP=.85]
        [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
        [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
        [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 180.:MNI=.013:SCI=   .0]
        [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00128------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE RESERVOIR ->    1.0 02:C7             1.62     .347 No_date   28:00   64.42  n/a     .000
                 out <=    1.0 01:C7-STR         1.62     .096 No_date   28:17   64.42  n/a     .000
            overflow <=    1.0 03:C7-OVF          .00     .000 No_date    0:00     .00  n/a     .000
       {MxStoUsed=.4698E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00129------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:ST-6            .41     .073 No_date   28:00   50.67 .622     .000
        [XIMP=.46:TIMP=.57]
        [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
        [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
        [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=  91.:MNI=.013:SCI=   .0]
        [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00130------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE RESERVOIR ->    1.0 02:ST-6            .41     .073 No_date   28:00   50.67  n/a     .000
                 out <=    1.0 01:ST6STR          .41     .036 No_date   28:10   50.67  n/a     .000
            overflow <=    1.0 03:ST6OVF          .00     .000 No_date    0:00     .00  n/a     .000
       {MxStoUsed=.3103E-02  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00131------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:PT4ST5       431.02    7.776 No_date   29:10   35.93  n/a     .000
                    +      1.0 02:C6-STR         1.87     .110 No_date   28:18   64.42  n/a     .000
                    +      1.0 02:C6-OVF          .00     .000 No_date    0:00     .00  n/a     .000
                    +      1.0 02:C7-STR         1.62     .096 No_date   28:17   64.42  n/a     .000
                    +      1.0 02:C7-OVF          .00     .000 No_date    0:00     .00  n/a     .000
                    +      1.0 02:ST6STR          .41     .036 No_date   28:10   50.67  n/a     .000
                    +      1.0 02:ST6OVF          .00     .000 No_date    0:00     .00  n/a     .000
                 SUM=      1.0 01:PT5ST6       434.92    7.904 No_date   29:09   36.17  n/a     .000
R0050:C00132------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE CHANNEL   ->    1.0 02:PT5ST6       434.92    7.904 No_date   29:09   36.17  n/a     .000
       [RDT= 1.00] out<-   1.0 01:DRAIN4       434.92    7.615 No_date   29:20   36.17  n/a     .000
        [L/S/n=  324./ .100/.043]
        {Vmax=  .490:Dmax= 1.531}
R0050:C00133------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS NASHYD     1.0 01:D4             1.73     .097 No_date   28:34   50.14 .615     .000
        [CN= 88.0: N= 3.00: Tp=  .60]
        [IaREC= 4.00: SMIN= 14.94: SMAX= 99.61: SK= .010]
        [InterEventTime=  12.00]
R0050:C00134------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:Area-B        24.04    4.418 No_date   28:02   60.51 .742     .000
        [XIMP=.62:TIMP=.77]
        [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
        [Pervious     area: IAper= 4.67:SLPP=1.40:LGP=  50.:MNP=.250:SCP=   .0]
        [Impervious   area: IAimp= 1.57:SLPI=1.40:LGI= 693.:MNI=.013:SCI=   .0]
        [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00135------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE RESERVOIR ->    1.0 02:Area-B        24.04    4.418 No_date   28:02   60.51  n/a     .000
                 out <=    1.0 01:SWMF-B        24.04     .566 No_date   28:42   60.51  n/a     .000
            overflow <=    1.0 03:SWMBOVF         .00     .000 No_date    0:00     .00  n/a     .000
       {MxStoUsed=.8944E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00136------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:DRAIN4       434.92    7.615 No_date   29:20   36.17  n/a     .000
                    +      1.0 02:D4             1.73     .097 No_date   28:34   50.14  n/a     .000
                    +      1.0 02:SWMF-B        24.04     .566 No_date   28:42   60.51  n/a     .000
                    +      1.0 02:SWMBOVF         .00     .000 No_date    0:00     .00  n/a     .000
                 SUM=      1.0 01:D4-EX        460.69    8.190 No_date   29:19   37.49  n/a     .000
R0050:C00137------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE CHANNEL   ->    1.0 02:D4-EX        460.69    8.190 No_date   29:19   37.49  n/a     .000
       [RDT= 1.00] out<-   1.0 01:DRAIN5       460.69    8.038 No_date   29:27   37.49  n/a     .000
        [L/S/n=  413./ .160/.033]
        {Vmax=  .675:Dmax= 1.051}
R0050:C00138------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS NASHYD     1.0 01:D5             1.90     .089 No_date   28:40   47.27 .580     .000
        [CN= 86.0: N= 3.00: Tp=  .69]
        [IaREC= 4.00: SMIN= 17.43: SMAX=116.21: SK= .010]
        [InterEventTime=  12.00]
R0050:C00139------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS NASHYD     1.0 01:O-13SDF        9.74     .578 No_date   28:21   44.42 .545     .000
        [CN= 81.0: N= 3.00: Tp=  .43]
        [IaREC= 4.00: SMIN= 25.21: SMAX=168.09: SK= .010]
        [InterEventTime=  12.00]
R0050:C00140------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE RESERVOIR ->    1.0 02:O-13SDF        9.74     .578 No_date   28:21   44.42  n/a     .000
                 out <=    1.0 01:SDF            9.74     .061 No_date   30:55   44.42  n/a     .000
            overflow <=    1.0 03:OVFSDF          .00     .000 No_date    0:00     .00  n/a     .000
       {MxStoUsed=.2427E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00141------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:DRAIN5       460.69    8.038 No_date   29:27   37.49  n/a     .000
                    +      1.0 02:D5             1.90     .089 No_date   28:40   47.27  n/a     .000
                    +      1.0 02:SDF            9.74     .061 No_date   30:55   44.42  n/a     .000
                 SUM=      1.0 01:PT6MC        472.33    8.151 No_date   29:27   37.68  n/a     .000
R0050:C00142------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS NASHYD     1.0 01:O-15          10.67     .800 No_date   28:13   43.28 .531     .000
        [CN= 82.0: N= 3.00: Tp=  .30]
        [IaREC= 4.00: SMIN= 23.09: SMAX=153.94: SK= .010]
        [InterEventTime=  12.00]
R0050:C00143------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:PT6MC        472.33    8.151 No_date   29:27   37.68  n/a     .000
                    +      1.0 02:O-15          10.67     .800 No_date   28:13   43.28  n/a     .000
                 SUM=      1.0 01:M-C          483.00    8.281 No_date   29:26   37.80  n/a     .000
R0050:C00144------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE CHANNEL   ->    1.0 02:M-C          483.00    8.281 No_date   29:26   37.80  n/a     .000
       [RDT= 1.00] out<-   1.0 01:O-14Ch       483.00    7.494 No_date   29:58   37.80  n/a     .000
        [L/S/n=  845./ .100/.033]
        {Vmax=  .549:Dmax= 1.780}
R0050:C00145------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS NASHYD     1.0 01:O-14           5.00     .616 No_date   28:04   43.28 .531     .000
        [CN= 82.0: N= 3.00: Tp=  .13]
        [IaREC= 4.00: SMIN= 23.09: SMAX=153.94: SK= .010]
        [InterEventTime=  12.00]
R0050:C00146------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:O-14Ch       483.00    7.494 No_date   29:58   37.80  n/a     .000
                    +      1.0 02:O-14           5.00     .616 No_date   28:04   43.28  n/a     .000
                 SUM=      1.0 01:OKEEFE       488.00    7.533 No_date   29:58   37.86  n/a     .000
#*****************************************************************************
#    Okeefe Pond
#    - Rating curve obtained assuming 40m3/ha in 24 hours for quality control
#      and a ratio of the catchment area to the West Clarke pond rating curve
#      from the MSS for the next coordinates
#*****************************************************************************
R0050:C00147------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:S-1-D2        18.67    3.334 No_date   28:01   63.95 .785     .000
        [XIMP=.65:TIMP=.65]
        [LOSS= 2 :CN= 75.0]
        [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
        [Impervious   area: IAimp= 1.57:SLPI= .75:LGI= 353.:MNI=.013:SCI=   .0]
        [IaRECimp=   4.00: IaRECper=   4.00]
        [SMIN= 33.81: SMAX=225.43: SK= .010]
R0050:C00148------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     COMPUTE DUALHYD       1.0 01:S-1-D2        18.67    3.334 No_date   28:01   63.95  n/a     .000
      Major System   /     1.0 02:S-1-D2J         .00     .000 No_date    0:00     .00  n/a     .000
      Minor System   \     1.0 03:S-1-D2N       18.67    2.097 No_date   27:53   64.33  n/a     .000
        {MjSysSto=.6757E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00149------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ADD HYD               1.0 02:S-1-D2J         .00     .000 No_date    0:00     .00  n/a     .000
                    +      1.0 02:S-1-D2N       18.67    2.097 No_date   27:53   64.33  n/a     .000
                 SUM=      1.0 01:S-1-D2S       18.67    2.097 No_date   27:53   64.33  n/a     .000
R0050:C00150------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     ROUTE RESERVOIR ->    1.0 02:S-1-D2S       18.67    2.097 No_date   27:53   64.33  n/a     .000
                 out <=    1.0 01:S-1-D2R       18.67     .217 No_date   29:19   64.33  n/a     .000
            overflow <=    1.0 03:S-1-D2Rovf      .00     .000 No_date    0:00     .00  n/a     .000
       {MxStoUsed=.7233E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00151------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     CONTINUOUS STANDHYD   1.0 01:S-1-D3         6.79    1.304 No_date   28:00   63.95 .785     .000
        [XIMP=.65:TIMP=.65]
        [LOSS= 2 :CN= 75.0]
        [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
        [Impervious   area: IAimp= 1.57:SLPI= .75:LGI= 213.:MNI=.013:SCI=   .0]
        [IaRECimp=   4.00: IaRECper=   4.00]
        [SMIN= 33.81: SMAX=225.43: SK= .010]
R0050:C00152------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
     COMPUTE DUALHYD       1.0 01:S-1-D3         6.79    1.304 No_date   28:00   63.95  n/a     .000
      Major System   /     1.0 02:S-1-D3J         .00     .000 No_date    0:00     .00  n/a     .000
      Minor System   \     1.0 03:S-1-D3N        6.79     .831 No_date   27:52   63.98  n/a     .000
        {MjSysSto=.2274E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
```

```
R0050:C00153------------DTmin-ID:NHYD----------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:S-1-D3J         .00      .000 No_date    0:00      .00  n/a     .000
                      +    1.0 02:S-1-D3N        6.79      .831 No_date   27:52    63.98  n/a     .000
                   SUM=    1.0 01:S-1-D3S        6.79      .831 No_date   27:52    63.98  n/a     .000
R0050:C00154------------DTmin-ID:NHYD----------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->     1.0 02:S-1-D3S        6.79      .831 No_date   27:52    63.98  n/a     .000
                 out <=    1.0 01:S-1-D3R        6.79      .078 No_date   29:16    63.98  n/a     .000
            overflow <=    1.0 03:S-1-D3Rovf      .00      .000 No_date    0:00      .00  n/a     .000
     {MxStoUsed=.2609E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00155------------DTmin-ID:NHYD----------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:N_OK       53064.36  125.608 No_date   33:43    33.60  n/a     .000
                      +    1.0 02:OKEEFE       488.00    7.533 No_date   29:58    37.86  n/a     .000
                      +    1.0 02:S-1-D2R       18.67     .217 No_date   29:19    64.33  n/a     .000
                      +    1.0 02:S-1-D3R        6.79     .078 No_date   29:16    63.98  n/a     .000
                      +    1.0 02:S-1-D2Rovf      .00     .000 No_date    0:00      .00  n/a     .000
                      +    1.0 02:S-1-D3Rovf      .00     .000 No_date    0:00      .00  n/a     .000
                   SUM=    1.0 01:SN_OK      53577.82  128.466 No_date   33:19    33.65  n/a     .000
R0050:C00156------------DTmin-ID:NHYD----------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD               1.0 01:SN_OK      53577.82  128.466 No_date   33:19    33.65  n/a     .000
      fname :SN_OK.0050
      remark:Total Flows at Okeefe Drain
#
# Hydrograph from Node Okeefe routed to Node at Foster Drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 6215
#
R0050:C00157------------DTmin-ID:NHYD----------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->     1.0 02:SN_OK      53577.82  128.466 No_date   33:19    33.65  n/a     .000
     [RDT= 1.00] out<-     1.0 01:N_FO       53577.82  128.055 No_date   33:44    33.65  n/a     .000
      [L/S/n= 1183./ .076/.035]
      {Vmax= 1.240:Dmax= 3.378}
#*****************************************************************************
#    Catchment FOSTER
#    - To Foster ditch (north of the Jock)
#    - Partially developed (medium density); remaining agricultural
#    - 2020-12-01 JFSA Foster area is 332 as per Foster SWMF Environmental Study Report, CH2MHILL, Aug 2013.
#    - 2020-12-01 decrease Foster drainage area from (373 HA) to (307.98 HA) after increasing Okeefe drainage area to (5
#    - 2021-02-12  update Foster area to 325.44 ha as measured from QGIS
#*****************************************************************************
R0050:C00158------------DTmin-ID:NHYD----------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:FOSTER       325.44   32.213 No_date   28:11    58.69 .720     .000
      [XIMP=.55:TIMP=.55]
      [LOSS= 2 :CN= 74.0]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1473.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 36.67: SMAX=244.49: SK= .010]
#*****************************************************************************
#    Foster Pond
#    - Rating curve obtained assuming 40m3/ha in 24 hours for quality control
#      and a ratio of the catchment area to the West Clarke pond rating curve
#      from the MSS for the next coordinates
#*****************************************************************************
R0050:C00159------------DTmin-ID:NHYD----------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->     1.0 02:FOSTER       325.44   32.213 No_date   28:11    58.69  n/a     .000
                 out <=    1.0 01:P_FOS        325.44    8.155 No_date   29:03    58.69  n/a     .000
            overflow <=    1.0 03:FO-OVF          .00     .000 No_date    0:00      .00  n/a     .000
     {MxStoUsed=.7887E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00160------------DTmin-ID:NHYD----------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:P_FOS        325.44    8.155 No_date   29:03    58.69  n/a     .000
                      +    1.0 02:FO-OVF          .00     .000 No_date    0:00      .00  n/a     .000
                   SUM=    1.0 01:FOSTER-OUT   325.44    8.155 No_date   29:03    58.69  n/a     .000
#*****************************************************************************
R0050:C00161------------DTmin-ID:NHYD----------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:W_CLAR_BRA    73.29   10.462 No_date   28:05    63.49 .779     .000
      [XIMP=.60:TIMP=.65]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 699.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0050:C00162------------DTmin-ID:NHYD----------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->     1.0 02:W_CLAR_BRA    73.29   10.462 No_date   28:05    63.49  n/a     .000
                 out <=    1.0 01:MS_P10        73.29    1.204 No_date   29:09    63.49  n/a     .000
            overflow <=    1.0 03:P10-OVF         .00     .000 No_date    0:00      .00  n/a     .000
     {MxStoUsed=.1950E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00163------------DTmin-ID:NHYD----------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-FO-D2      4.94     .796 No_date   28:01    58.69 .720     .000
      [XIMP=.55:TIMP=.55]
      [LOSS= 2 :CN= 74.0]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 181.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 36.67: SMAX=244.49: SK= .010]
R0050:C00164------------DTmin-ID:NHYD----------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD        1.0 01:S-1-FO-D2      4.94     .796 No_date   28:01    58.69  n/a     .000
     Major System   /      1.0 02:S-1-FO-D2J      .00     .000 No_date    0:00      .00  n/a     .000
     Minor System   \      1.0 03:S-1-FO-D2N     4.94     .508 No_date   27:53    58.77  n/a     .000
      {MjSysSto=.1462E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00165------------DTmin-ID:NHYD----------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:S-1-FO-D2J      .00     .000 No_date    0:00      .00  n/a     .000
                      +    1.0 02:S-1-FO-D2N     4.94     .508 No_date   27:53    58.77  n/a     .000
                   SUM=    1.0 01:S-1-FO-D2S     4.94     .508 No_date   27:53    58.77  n/a     .000
R0050:C00166------------DTmin-ID:NHYD----------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->     1.0 02:S-1-FO-D2S     4.94     .508 No_date   27:53    58.77  n/a     .000
                 out <=    1.0 01:S-1-FO-D2R     4.94     .052 No_date   29:33    58.76  n/a     .000
            overflow <=    1.0 03:S-1FOD2ovf      .00     .000 No_date    0:00      .00  n/a     .000
     {MxStoUsed=.1726E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00167------------DTmin-ID:NHYD----------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:FOSTER-OUT   325.44    8.155 No_date   29:03    58.69  n/a     .000
                      +    1.0 02:S-1-FO-D2R     4.94     .052 No_date   29:33    58.76  n/a     .000
                      +    1.0 02:S-1FOD2ovf      .00     .000 No_date    0:00      .00  n/a     .000
                   SUM=    1.0 01:980          330.38    8.207 No_date   29:03    58.69  n/a     .000
R0050:C00168------------DTmin-ID:NHYD----------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD               1.0 01:980          330.38    8.207 No_date   29:03    58.69  n/a     .000
      fname :980.0050
      remark:Total Flows at Station 980 on Foster Drain
#
# Hydrograph from Node Foster SWM (Station 980)to Node at station 520
# Channel X-Section obtained from RVCA Hydraulic Model - Station 980
#
R0050:C00169------------DTmin-ID:NHYD----------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->     1.0 02:980          330.38    8.207 No_date   29:03    58.69  n/a     .000
 *   [RDT= 1.00] out<-     1.0 01:980-out      330.38    7.836 No_date   29:23    58.69  n/a     .000
      [L/S/n=  460./ .043/.035]
      {Vmax=  .595:Dmax= 1.599}
R0050:C00170------------DTmin-ID:NHYD----------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-FO-D1      5.11     .927 No_date   28:00    63.41 .778     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 74.0]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 185.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 36.67: SMAX=244.49: SK= .010]
R0050:C00171------------DTmin-ID:NHYD----------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD        1.0 01:S-1-FO-D1      5.11     .927 No_date   28:00    63.41  n/a     .000
     Major System   /      1.0 02:S-1-FO-D1J      .00     .000 No_date    0:00      .00  n/a     .000
     Minor System   \      1.0 03:S-1-FO-D1N     5.11     .605 No_date   28:17    63.68  n/a     .000
      {MjSysSto=.1586E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00172------------DTmin-ID:NHYD----------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:S-1-FO-D1N     5.11     .605 No_date   27:53    63.68  n/a     .000
                      +    1.0 02:S-1-FO-D1J      .00     .000 No_date    0:00      .00  n/a     .000
                   SUM=    1.0 01:S-1-FO-D1S     5.11     .605 No_date   27:53    63.68  n/a     .000
R0050:C00173------------DTmin-ID:NHYD----------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->     1.0 02:S-1-FO-D1S     5.11     .605 No_date   27:53    63.68  n/a     .000
                 out <=    1.0 01:S-1-FO-D1R     5.11     .059 No_date   29:23    63.68  n/a     .000
            overflow <=    1.0 03:S-1FOD1ovf      .00     .000 No_date    0:00      .00  n/a     .000
     {MxStoUsed=.1952E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00174------------DTmin-ID:NHYD----------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:980-out      330.38    7.836 No_date   29:23    58.69  n/a     .000
                      +    1.0 02:S-1-FO-D1R     5.11     .059 No_date   29:23    63.68  n/a     .000
                      +    1.0 02:S-1FOD1ovf      .00     .000 No_date    0:00      .00  n/a     .000
                   SUM=    1.0 01:520          335.49    7.895 No_date   29:23    58.77  n/a     .000
R0050:C00175------------DTmin-ID:NHYD----------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD               1.0 01:520          335.49    7.895 No_date   29:23    58.77  n/a     .000
      fname :520.0050
      remark:Total Flows at Sation 520 on Foster Drain
# Hydrograph from Node at Station 520 (Foster Drain) to Node at station 6016 (Jock River)
# Channel X-Section obtained from RVCA Hydraulic Model - Station 520
#
R0050:C00176------------DTmin-ID:NHYD----------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->     1.0 02:520          335.49    7.895 No_date   29:23    58.77  n/a     .000
     [RDT= 1.00] out<-     1.0 01:520-out      335.49    7.860 No_date   29:27    58.77  n/a     .000
      [L/S/n=  860./ .587/.035]
      {Vmax= 1.531:Dmax=  .760}
R0050:C00177------------DTmin-ID:NHYD----------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-FO-F-D    14.96    2.535 No_date   28:01    63.41 .778     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 74.0]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 316.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 36.67: SMAX=244.49: SK= .010]
R0050:C00178------------DTmin-ID:NHYD----------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD        1.0 01:S-1-FO-F-D    14.96    2.535 No_date   28:01    63.41  n/a     .000
     Major System   /      1.0 02:S-1FO-F-DJ      .00     .000 No_date    0:00      .00  n/a     .000
     Minor System   \      1.0 03:S-1FO-F-DN    14.96    1.615 No_date   27:53    63.62  n/a     .000
      {MjSysSto=.5006E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00179------------DTmin-ID:NHYD----------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:S-1FO-F-DJ      .00     .000 No_date    0:00      .00  n/a     .000
                      +    1.0 02:S-1FO-F-DN    14.96    1.615 No_date   27:53    63.62  n/a     .000
                   SUM=    1.0 01:S-1FO-F-DS    14.96    1.615 No_date   27:53    63.62  n/a     .000
R0050:C00180------------DTmin-ID:NHYD----------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->     1.0 02:S-1FO-F-DS    14.96    1.615 No_date   27:53    63.62  n/a     .000
                 out <=    1.0 01:S-1FO-F-DR    14.96     .171 No_date   29:28    63.62  n/a     .000
            overflow <=    1.0 03:S-1FoFDovf      .00     .000 No_date    0:00      .00  n/a     .000
     {MxStoUsed=.5709E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00181------------DTmin-ID:NHYD----------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-D8         5.27    1.052 No_date   28:01    46.77 .574     .000
      [XIMP=.32:TIMP=.65]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI= .75:LGI= 187.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00182------------DTmin-ID:NHYD----------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD        1.0 01:S-1-D8         5.27    1.052 No_date   28:01    46.77  n/a     .000
     Major System   /      1.0 02:S-1-D8J         .00     .000 No_date    0:00      .00  n/a     .000
     Minor System   \      1.0 03:S-1-D8N        5.27     .672 No_date   27:53    46.88  n/a     .000
      {MjSysSto=.2053E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00183------------DTmin-ID:NHYD----------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:S-1-D8J         .00     .000 No_date    0:00      .00  n/a     .000
                      +    1.0 02:S-1-D8N        5.27     .672 No_date   27:53    46.88  n/a     .000
                   SUM=    1.0 01:S-1-D8S        5.27     .672 No_date   27:53    46.88  n/a     .000
R0050:C00184------------DTmin-ID:NHYD----------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->     1.0 02:S-1-D8S        5.27     .672 No_date   27:53    46.88  n/a     .000
                 out <=    1.0 01:S-1-D8R        5.27     .055 No_date   28:46    46.88  n/a     .000
            overflow <=    1.0 03:S-1-D8Rovf      .00     .000 No_date    0:00      .00  n/a     .000
     {MxStoUsed=.1843E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00185------------DTmin-ID:NHYD----------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:S-1-A         75.88    3.042 No_date   28:36    39.91 .490     .000
      [CN= 77.0: N= 3.00: Tp=  .62]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0050:C00186------------DTmin-ID:NHYD----------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:W_CLAR_UND    35.65     .943 No_date   29:10    39.91 .490     .000
      [CN= 77.0: N= 3.00: Tp= 1.10]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0050:C00187------------DTmin-ID:NHYD----------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:N_FO       53577.82  128.055 No_date   33:44    33.65  n/a     .000
                      +    1.0 02:520-out      335.49    7.860 No_date   29:27    58.77  n/a     .000
                      +    1.0 02:MS_P10        73.29    1.204 No_date   29:09    63.49  n/a     .000
                      +    1.0 02:P10-OVF         .00     .000 No_date    0:00      .00  n/a     .000
                      +    1.0 02:W_CLAR_UND    35.65     .943 No_date   29:10    39.91  n/a     .000
                      +    1.0 02:S-1FoFDovf      .00     .000 No_date    0:00      .00  n/a     .000
                      +    1.0 02:S-1FO-F-DR    14.96     .171 No_date   29:28    63.62  n/a     .000
                      +    1.0 02:S-1-D8Rovf      .00     .000 No_date    0:00      .00  n/a     .000
                      +    1.0 02:S-1-D8R        5.27     .055 No_date   28:46    46.88  n/a     .000
                      +    1.0 02:S-1-A         75.88    3.042 No_date   28:36    39.91  n/a     .000
                   SUM=    1.0 01:SN_FO      54118.36  133.255 No_date   33:20    33.87  n/a     .000
R0050:C00188------------DTmin-ID:NHYD----------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD               1.0 01:SN_FO      54118.36  133.255 No_date   33:20    33.87  n/a     .000
      fname :SN_FO.0050
      remark:Total Flows at Foster Drain
# Hydrograph from Node Foster routed to Node at Cedarview Road
# Channel X-Section obtained from RVCA Hydraulic Model - Station 6016
#
R0050:C00189------------DTmin-ID:NHYD----------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->     1.0 02:SN_FO      54118.36  133.255 No_date   33:20    33.87  n/a     .000
 *   [RDT= 1.00] out<-     1.0 01:N_CE       54118.36  133.007 No_date   33:45    33.87  n/a     .000
      [L/S/n=  159./ .082/.035]
      {Vmax= 1.438:Dmax= 4.182}
#*****************************************************************************
#    Catchment S-1
#    - To Jock River (north and south of Jock)
#    - Primarily agricultural fields; portion of sand quarry
#*****************************************************************************
R0050:C00190------------DTmin-ID:NHYD----------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:S-1-B         55.36    2.770 No_date   28:23    39.91 .490     .000
      [CN= 77.0: N= 3.00: Tp=  .45]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
#    -  JFSA 2021-02-24 change the name from S-1-BCDC to S-1-A and S-1-B. Change their TP values based on the new areas
#    -  JFSA 2021-02-24 "S-1-BCDC-1" and "S-1-BCDC-2" are not existing anymore. "S-1-BCDC-1" is part of "S-1-FO-D2" and
#    -  JFSA 2021-01-19, after adding Greenbank pond, "S-1-BCDC-3" is not existing anymore
R0050:C00191------------DTmin-ID:NHYD----------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-D1        21.67    3.809 No_date   28:01    63.95 .785     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .75:LGI= 380.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0050:C00192------------DTmin-ID:NHYD----------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD        1.0 01:S-1-D1        21.67    3.809 No_date   28:01    63.95  n/a     .000
     Major System   /      1.0 02:S-1-D1J         .00     .000 No_date    0:00      .00  n/a     .000
     Minor System   \      1.0 03:S-1-D1N       21.67    2.409 No_date   27:53    64.14  n/a     .000
      {MjSysSto=.7710E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00193------------DTmin-ID:NHYD----------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:S-1-D1J         .00     .000 No_date    0:00      .00  n/a     .000
                      +    1.0 02:S-1-D1N       21.67    2.409 No_date   27:53    64.14  n/a     .000
                   SUM=    1.0 01:S-1-D1S       21.67    2.409 No_date   27:53    64.14  n/a     .000
R0050:C00194------------DTmin-ID:NHYD----------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->     1.0 02:S-1-D1S       21.67    2.409 No_date   27:53    64.14  n/a     .000
                 out <=    1.0 01:S-1-D1R       21.67     .250 No_date   29:21    64.14  n/a     .000
            overflow <=    1.0 03:S-1-D1Rovf      .00     .000 No_date    0:00      .00  n/a     .000
     {MxStoUsed=.8355E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00195------------DTmin-ID:NHYD----------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-D4         3.28     .652 No_date   28:00    63.95 .785     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .75:LGI= 148.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0050:C00196------------DTmin-ID:NHYD----------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD        1.0 01:S-1-D4         3.28     .652 No_date   28:00    63.95  n/a     .000
     Major System   /      1.0 02:S-1-D4J         .00     .000 No_date    0:00      .00  n/a     .000
     Minor System   \      1.0 03:S-1-D4N        3.28     .421 No_date   27:52    63.99  n/a     .000
      {MjSysSto=.1072E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00197------------DTmin-ID:NHYD----------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:S-1-D4J         .00     .000 No_date    0:00      .00  n/a     .000
                      +    1.0 02:S-1-D4N        3.28     .421 No_date   27:52    63.99  n/a     .000
                   SUM=    1.0 01:S-1-D4S        3.28     .421 No_date   27:52    63.99  n/a     .000
R0050:C00198------------DTmin-ID:NHYD----------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->     1.0 02:S-1-D4S        3.28     .421 No_date   27:52    63.99  n/a     .000
                 out <=    1.0 01:S-1-D4R        3.28     .038 No_date   29:14    63.98  n/a     .000
            overflow <=    1.0 03:S-1-D4Rovf      .00     .000 No_date    0:00      .00  n/a     .000
     {MxStoUsed=.1260E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00199------------DTmin-ID:NHYD----------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-D5        12.84    2.360 No_date   28:01    63.95 .785     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .75:LGI= 293.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0050:C00200------------DTmin-ID:NHYD----------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD        1.0 01:S-1-D5        12.84    2.360 No_date   28:01    63.95  n/a     .000
     Major System   /      1.0 02:S-1-D5J         .00     .000 No_date    0:00      .00  n/a     .000
     Minor System   \      1.0 03:S-1-D5N       12.84    1.500 No_date   27:53    64.12  n/a     .000
      {MjSysSto=.4409E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00201------------DTmin-ID:NHYD----------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:S-1-D5J         .00     .000 No_date    0:00      .00  n/a     .000
                      +    1.0 02:S-1-D5N       12.84    1.500 No_date   27:53    64.12  n/a     .000
                   SUM=    1.0 01:S-1-D5S       12.84    1.500 No_date   27:53    64.12  n/a     .000
R0050:C00202------------DTmin-ID:NHYD----------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->     1.0 02:S-1-D5S       12.84    1.500 No_date   27:53    64.12  n/a     .000
                 out <=    1.0 01:S-1-D5R       12.84     .148 No_date   29:18    64.12  n/a     .000
            overflow <=    1.0 03:S-1-D5Rovf      .00     .000 No_date    0:00      .00  n/a     .000
     {MxStoUsed=.4948E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00203------------DTmin-ID:NHYD----------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-D6         1.75     .357 No_date   28:00    63.95 .785     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .75:LGI= 108.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0050:C00204------------DTmin-ID:NHYD----------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD        1.0 01:S-1-D6         1.75     .357 No_date   28:00    63.95  n/a     .000
     Major System   /      1.0 02:S-1-D6J         .00     .000 No_date    0:00      .00  n/a     .000
     Minor System   \      1.0 03:S-1-D6N        1.75     .232 No_date   27:52    64.46  n/a     .000
      {MjSysSto=.5657E+02, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00205------------DTmin-ID:NHYD----------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:S-1-D6J         .00     .000 No_date    0:00      .00  n/a     .000
                      +    1.0 02:S-1-D6N        1.75     .232 No_date   27:52    64.46  n/a     .000
                   SUM=    1.0 01:S-1-D6S        1.75     .232 No_date   27:52    64.46  n/a     .000
R0050:C00206------------DTmin-ID:NHYD----------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->     1.0 02:S-1-D6S        1.75     .232 No_date   27:52    64.46  n/a     .000
                 out <=    1.0 01:S-1-D6R        1.75     .020 No_date   29:11    64.45  n/a     .000
            overflow <=    1.0 03:S-1-D6Rovf      .00     .000 No_date    0:00      .00  n/a     .000
     {MxStoUsed=.6799E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00207------------DTmin-ID:NHYD----------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-D7         2.03     .411 No_date   28:00    63.95 .785     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .75:LGI= 116.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0050:C00208------------DTmin-ID:NHYD----------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD        1.0 01:S-1-D7         2.03     .411 No_date   28:00    63.95  n/a     .000
     Major System   /      1.0 02:S-1-D7J         .00     .000 No_date    0:00      .00  n/a     .000
     Minor System   \      1.0 03:S-1-D7N        2.03     .265 No_date   27:52    64.19  n/a     .000
      {MjSysSto=.6624E+02, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00209------------DTmin-ID:NHYD----------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:S-1-D7J         .00     .000 No_date    0:00      .00  n/a     .000
                      +    1.0 02:S-1-D7N        2.03     .265 No_date   27:52    64.19  n/a     .000
                   SUM=    1.0 01:S-1-D7S        2.03     .265 No_date   27:52    64.19  n/a     .000
R0050:C00210------------DTmin-ID:NHYD----------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->     1.0 02:S-1-D7S        2.03     .265 No_date   27:52    64.19  n/a     .000
                 out <=    1.0 01:S-1-D7R        2.03     .024 No_date   29:12    64.19  n/a     .000
            overflow <=    1.0 03:S-1-D7Rovf      .00     .000 No_date    0:00      .00  n/a     .000
     {MxStoUsed=.7835E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
#    Catchment W_CLAR
#    - To West Clarke Drain (south of the Jock)
#    - Subdivision with 43% imp. as per Barrhaven South MSS
#    - 2020-11-30 update CLARKE Tributary Drainage Area to  = 121 ha based on P598(04)-11
#    - 2020-11-30 split CLARKE Drainage Area to MAJOR and ALL
#*****************************************************************************
R0050:C00211------------DTmin-ID:NHYD----------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:W_CLAR_MJ      1.77     .319 No_date   28:00    59.44 .729     .000
      [XIMP=.46:TIMP=.59]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 109.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
# 5-Year + 12% Capture
R0050:C00212------------DTmin-ID:NHYD----------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->     1.0 02:W_CLAR_MJ      1.77     .319 No_date   28:00    59.44  n/a     .000
                 out <=    1.0 01:W_CLAR_MJn     1.70     .213 No_date   27:53    59.44  n/a     .000
            overflow <=    1.0 03:W_CLAR_MJj      .08     .102 No_date   28:01    59.44  n/a     .000
     {MxStoUsed=.1125E-03  m3, TotOvfVol=.4485E-02  m3, N-Ovf=    1, TotDurOvf=    0.hrs}
```

```
R0050:C00213-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:W_CLAR_ALL   119.40   17.358 No_date   28:04   63.49 .779     .000
      [XIMP=.60:TIMP=.65]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 892.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0050:C00214-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:W_CLAR_ALL   119.40   17.358 No_date   28:04   63.49  n/a     .000
                    +     1.0 02:W_CLAR_MJj      .08     .102 No_date   28:01   59.44  n/a     .000
                 SUM=     1.0 01:W_CLAR       119.47   17.371 No_date   28:04   63.49  n/a     .000
R0050:C00215-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:W_CLAR       119.47   17.371 No_date   28:04   63.49  n/a     .000
      fname :W_CLAR.0050
      remark:Total Flows to West Clarke
#*****************************************************************************
#    West Clarke Pond 2
#    - Rating curve obtained from Barrhaven South MSS modeling
#    - Tributary Drainage Area to MSS Pond 2 = 241 ha
#*****************************************************************************
R0050:C00216-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:W_CLAR       119.47   17.371 No_date   28:04   63.49  n/a     .000
                out <=    1.0 01:MS_P2        119.47   10.246 No_date   28:16   63.49  n/a     .000
           overflow <=    1.0 03:P2-OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.3076E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
#*****************************************************************************
R0050:C00217-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N_CE       54118.36  133.007 No_date   33:45   33.87  n/a     .000
                    +     1.0 02:S-1-D4R        3.28     .038 No_date   29:14   63.98  n/a     .000
                    +     1.0 02:S-1-D5R       12.84     .148 No_date   29:18   64.12  n/a     .000
                    +     1.0 02:S-1-D4Rovf      .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:S-1-D5Rovf      .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:MS_P2        119.47   10.246 No_date   28:16   63.49  n/a     .000
                    +     1.0 02:P2-OVF          .00     .000 No_date    0:00     .00  n/a     .000
                 SUM=     1.0 01:SN_CE      54253.95  134.004 No_date   33:44   33.95  n/a     .000
R0050:C00218-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_CE      54253.95  134.004 No_date   33:44   33.95  n/a     .000
      fname :SN_CE.0050
      remark:Total Flows before Station 5737 on Jock River
# Channel X-Section obtained from RVCA Hydraulic Model - Station 5737
# 2021-02-25 add station 5737 before station 5002. Station 5737 was extracted from the HEC-RAS model T:\PROJ\1474-16\Des
# JFSA 2021-03-02  change the slope to 0.0175% instead of 0.02593 to stabilize the model
R0050:C00219-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_CE      54253.95  134.004 No_date   33:44   33.95  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:5737       54253.95  125.921 No_date   35:58   33.95  n/a     .000
      [L/S/n=  270./ .018/.035]
      {Vmax=  .827:Dmax= 5.276}
R0050:C00220-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:5737       54253.95  125.921 No_date   35:58   33.95  n/a     .000
                    +     1.0 02:S-1-D1R       21.67     .250 No_date   29:21   64.14  n/a     .000
                    +     1.0 02:S-1-D6R        1.75     .020 No_date   29:11   64.45  n/a     .000
                    +     1.0 02:S-1-D7R        2.03     .024 No_date   29:12   64.19  n/a     .000
                    +     1.0 02:S-1-D1Rovf      .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:S-1-D6Rovf      .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:S-1-D7Rovf      .00     .000 No_date    0:00     .00  n/a     .000
                 SUM=     1.0 01:5002       54279.41  126.128 No_date   35:58   33.96  n/a     .000
R0050:C00221-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:5002       54279.41  126.128 No_date   35:58   33.96  n/a     .000
      fname :5002.0050
      remark:Total Flows before Station 5002 on Jock River
# Hydrograph from Node Cedarview Road routed to Node at West Clarke Drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 5002
# JFSA 2021-02-19 Change the slope from 0.01 % (as per Stantec Report 2007) to 0.0255 % so the model will be more stable
# JFSA 2021-02-19 Change to three ROUTE CHANNEL with length 275 m each instead of one with 825 m length so the model wil
# JFSA 2021-02-26 change the length of 5002 route channel from 825 m to 736 m. That is because of adding station 5737 be
R0050:C00222-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:5002       54279.41  126.128 No_date   35:58   33.96  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:N_WCa      54279.41  126.118 No_date   36:03   33.96  n/a     .000
      [L/S/n=  245./ .095/.035]
      {Vmax= 1.266:Dmax= 2.967}
R0050:C00223-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:N_WCa      54279.41  126.118 No_date   36:03   33.96  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:N_WCb      54279.41  126.102 No_date   36:10   33.96  n/a     .000
      [L/S/n=  245./ .095/.035]
      {Vmax= 1.266:Dmax= 2.967}
R0050:C00224-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:N_WCb      54279.41  126.102 No_date   36:10   33.96  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:N_WC       54279.41  125.986 No_date   36:27   33.96  n/a     .000
      [L/S/n=  245./ .095/.035]
      {Vmax= 1.266:Dmax= 2.967}
#*****************************************************************************
# Hydrograph from Node West Clarke routed to Node at Kennedy - Burnett Drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 4534
#
R0050:C00225-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:N_WC       54279.41  125.986 No_date   36:27   33.96  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:N_KB       54279.41  125.695 No_date   36:19   33.96  n/a     .000
      [L/S/n= 1020./ .050/.035]
      {Vmax= 1.123:Dmax= 3.747}
#*****************************************************************************
#    Catchment KEN_BU
#    - To Kennedy-Burnett SWM Facility
#    - Outlets to Fraser-Clarke drain (north of the Jock)
#    - Medium density residential subdivision
#*****************************************************************************
#*****************************************************************************
#   Existing Kennedy-Burnett SWM Facility
#    - Rating curve obtained from URTKBP
#    - Tributary Drainage Area to Pond = 160 ha
#*****************************************************************************
R0050:C00226-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-01A        40.82    4.812 No_date   28:10   33.07 .406     .000
      [XIMP=.10:TIMP=.40]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI= .50:LGI= 522.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00227-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-01A        40.82    4.812 No_date   28:10   33.07  n/a     .000
     Major System   /     1.0 02:KB-01A-MJ       .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-01A-MN     40.82    3.600 No_date   28:00   33.14  n/a     .000
      {MjSysSto=.1012E+04, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00228-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-01A-MJ       .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:KB-01A-MN     40.82    3.600 No_date   28:00   33.14  n/a     .000
                 SUM=     1.0 01:KB-01A-S      40.82    3.600 No_date   28:00   33.14  n/a     .000
R0050:C00229-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-01B        31.10    3.541 No_date   28:07   36.47 .447     .000
      [XIMP=.19:TIMP=.38]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .42:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI= .42:LGI= 455.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00230-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-01B        31.10    3.541 No_date   28:07   36.47  n/a     .000
     Major System   /     1.0 02:KB-01B-MJ       .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-01B-MN     31.10    1.585 No_date   27:53   36.51  n/a     .000
      {MjSysSto=.2627E+04, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00231-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-01B-MJ       .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:KB-01B-MN     31.10    1.585 No_date   27:53   36.51  n/a     .000
                 SUM=     1.0 01:KB-01B-S      31.10    1.585 No_date   27:53   36.51  n/a     .000
R0050:C00232-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-01C        13.78    2.163 No_date   28:04   37.72 .463     .000
      [XIMP=.20:TIMP=.41]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI= .50:LGI= 303.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00233-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-01C        13.78    2.163 No_date   28:04   37.72  n/a     .000
     Major System   /     1.0 02:KB-01C-MJ       .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-01C-MN     13.78    1.350 No_date   27:55   37.86  n/a     .000
      {MjSysSto=.5764E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00234-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-01C-MJ       .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:KB-01C-MN     13.78    1.350 No_date   27:55   37.86  n/a     .000
                 SUM=     1.0 01:KB-01C-S      13.78    1.350 No_date   27:55   37.86  n/a     .000
R0050:C00235-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-03         84.78   11.183 No_date   28:07   37.17 .456     .000
      [XIMP=.20:TIMP=.39]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI= .63:LGI= 752.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00236-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-03         84.78   11.183 No_date   28:07   37.17  n/a     .000
     Major System   /     1.0 02:KB-03-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-03-MN      84.78    5.270 No_date   27:54   37.24  n/a     .000
      {MjSysSto=.6453E+04, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00237-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-03-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:KB-03-MN      84.78    5.270 No_date   27:54   37.24  n/a     .000
                 SUM=     1.0 01:KB-03-S       84.78    5.270 No_date   27:54   37.24  n/a     .000
R0050:C00238-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-04          6.95    1.592 No_date   28:00   71.86 .882     .000
      [XIMP=.85:TIMP=.85]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .94:SLPI= .50:LGI= 215.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00239-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-04          6.95    1.592 No_date   28:00   71.86  n/a     .000
     Major System   /     1.0 02:KB-04-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-04-MN       6.95     .503 No_date   27:44   72.11  n/a     .000
      {MjSysSto=.9423E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00240-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-04-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:KB-04-MN       6.95     .503 No_date   27:44   72.11  n/a     .000
                 SUM=     1.0 01:KB-04-S        6.95     .503 No_date   27:44   72.11  n/a     .000
R0050:C00241-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-05          5.19    1.270 No_date   28:00   75.92 .931     .000
      [XIMP=.93:TIMP=.93]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 186.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00242-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-06         12.93    3.268 No_date   28:00   73.20 .898     .000
      [XIMP=.87:TIMP=.87]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .94:SLPI=4.75:LGI= 294.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00243-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-06         12.93    3.268 No_date   28:00   73.20  n/a     .000
     Major System   /     1.0 02:KB-06-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-06-MN      12.93    2.262 No_date   27:52   73.67  n/a     .000
      {MjSysSto=.4323E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00244-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-06-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:KB-06-MN      12.93    2.262 No_date   27:52   73.67  n/a     .000
                 SUM=     1.0 01:KB-06-S       12.93    2.262 No_date   27:52   73.67  n/a     .000
R0050:C00245-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-11          4.03     .921 No_date   28:00   61.82 .758     .000
      [XIMP=.68:TIMP=.68]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI=2.00:LGI= 164.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00246-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-11          4.03     .921 No_date   28:00   61.82  n/a     .000
     Major System   /     1.0 02:KB-11-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-11-MN       4.03     .577 No_date   27:52   62.10  n/a     .000
      {MjSysSto=.1581E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00247-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-11-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:KB-11-MN       4.03     .577 No_date   27:52   62.10  n/a     .000
                 SUM=     1.0 01:KB-11-S        4.03     .577 No_date   27:52   62.10  n/a     .000
R0050:C00248-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S1             4.99    1.304 No_date   28:00   75.92 .931     .000
      [XIMP=.93:TIMP=.93]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=2.00:LGI= 182.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00249-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-15          2.15     .497 No_date   28:00   69.00 .847     .000
      [XIMP=.79:TIMP=.79]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .16:SLPI= .30:LGI= 120.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00250-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-01A-S      40.82    3.600 No_date   28:00   33.14  n/a     .000
                    +     1.0 02:KB-01B-S      31.10    1.585 No_date   27:53   36.51  n/a     .000
                    +     1.0 02:KB-01C-S      13.78    1.350 No_date   27:55   37.86  n/a     .000
                    +     1.0 02:KB-03-S       84.78    5.270 No_date   27:54   37.24  n/a     .000
                    +     1.0 02:KB-04-S        6.95     .503 No_date   27:44   72.11  n/a     .000
                    +     1.0 02:KB-05          5.19    1.270 No_date   28:00   75.92  n/a     .000
                    +     1.0 02:KB-06-S       12.93    2.262 No_date   27:52   73.67  n/a     .000
                    +     1.0 02:KB-11-S        4.03     .577 No_date   27:52   62.10  n/a     .000
                    +     1.0 02:KB-15          2.15     .497 No_date   28:00   69.00  n/a     .000
                    +     1.0 02:S1             4.99    1.304 No_date   28:00   75.92  n/a     .000
                 SUM=     1.0 01:KB-P1        206.72   18.218 No_date   28:00   42.53  n/a     .000
R0050:C00251-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:KB-P1        206.72   18.218 No_date   28:00   42.53  n/a     .000
                out <=    1.0 01:KB-P1R       198.38   12.438 No_date   28:02   42.53  n/a     .000
           overflow <=    1.0 03:KB-P1ovf       8.34    5.573 No_date   28:02   42.53  n/a     .000
     {MxStoUsed=.7313E+00  m3, TotOvfVol=.3545E+00  m3, N-Ovf=    2, TotDurOvf=    1.hrs}
R0050:C00252-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-P1R       198.38   12.438 No_date   28:02   42.53  n/a     .000
                    +     1.0 02:KB-P1ovf       8.34    5.573 No_date   28:02   42.53  n/a     .000
                 SUM=     1.0 01:KB-Pond1     206.72   18.011 No_date   28:02   42.53  n/a     .000
R0050:C00253-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:KB-Pond1     206.72   18.011 No_date   28:02   42.53  n/a     .000
      fname :KB-Pond1.0050
      remark:Total Flows at KB first pond
R0050:C00254-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-07         10.86    2.656 No_date   28:00   72.58 .890     .000
      [XIMP=.86:TIMP=.86]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI=2.00:LGI= 269.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00255-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-07         10.86    2.656 No_date   28:00   72.58  n/a     .000
     Major System   /     1.0 02:KB-07-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-07-MN      10.86    2.094 No_date   28:08   72.95  n/a     .000
      {MjSysSto=.1950E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00256-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-07-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:KB-07-MN      10.86    2.094 No_date   28:08   72.95  n/a     .000
                 SUM=     1.0 01:KB-07-S       10.86    2.094 No_date   28:08   72.95  n/a     .000
R0050:C00257-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-08          6.61    1.444 No_date   28:00   59.78 .733     .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI=2.00:LGI= 210.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00258-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-08          6.61    1.444 No_date   28:00   59.78  n/a     .000
     Major System   /     1.0 02:KB-08-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-08-MN       6.61    1.058 No_date   27:53   60.05  n/a     .000
      {MjSysSto=.1439E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00259-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-08-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:KB-08-MN       6.61    1.058 No_date   27:53   60.05  n/a     .000
                 SUM=     1.0 01:KB-08-S        6.61    1.058 No_date   27:53   60.05  n/a     .000
R0050:C00260-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-09          2.60     .665 No_date   28:00   71.90 .882     .000
      [XIMP=.86:TIMP=.86]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=2.00:LGI= 132.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00261-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-10_1        2.37     .607 No_date   28:00   71.90 .882     .000
      [XIMP=.86:TIMP=.86]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=2.00:LGI= 126.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00262-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-10_2        1.14     .295 No_date   28:00   71.90 .882     .000
      [XIMP=.86:TIMP=.86]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=2.00:LGI=  87.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00263-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-12          4.86    1.174 No_date   28:00   68.26 .837     .000
      [XIMP=.79:TIMP=.79]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.10:SLPI=2.00:LGI= 180.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00264-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-12          4.86    1.174 No_date   28:00   68.26  n/a     .000
     Major System   /     1.0 02:KB-12-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-12-MN       4.86     .867 No_date   28:09   68.93  n/a     .000
      {MjSysSto=.1203E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00265-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-12-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:KB-12-MN       4.86     .867 No_date   28:09   68.93  n/a     .000
                 SUM=     1.0 01:KB-12-S        4.86     .867 No_date   28:09   68.93  n/a     .000
R0050:C00266-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-13         10.19    2.184 No_date   28:00   59.78 .733     .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI=2.00:LGI= 261.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00267-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-13         10.19    2.184 No_date   28:00   59.78  n/a     .000
     Major System   /     1.0 02:KB-13-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-13-MN      10.19    1.722 No_date   27:55   60.01  n/a     .000
      {MjSysSto=.1587E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00268-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-13-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:KB-13-MN      10.19    1.722 No_date   27:55   60.01  n/a     .000
                 SUM=     1.0 01:KB-13-S       10.19    1.722 No_date   27:55   60.01  n/a     .000
R0050:C00269-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-14          5.47    1.201 No_date   28:00   59.78 .733     .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI=2.00:LGI= 191.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00270-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-14          5.47    1.201 No_date   28:00   59.78  n/a     .000
     Major System   /     1.0 02:KB-14-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-14-MN       5.47     .873 No_date   27:53   60.02  n/a     .000
      {MjSysSto=.1239E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00271-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-14-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:KB-14-MN       5.47     .873 No_date   27:53   60.02  n/a     .000
                 SUM=     1.0 01:KB-14-S        5.47     .873 No_date   27:53   60.02  n/a     .000
R0050:C00272-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-16_2        3.42     .724 No_date   28:01   64.30 .789     .000
      [XIMP=.71:TIMP=.71]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .16:SLPI= .30:LGI= 151.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00273-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-Pond1     206.72   18.011 No_date   28:02   42.53  n/a     .000
                    +     1.0 02:KB-07-S       10.86    2.094 No_date   28:08   72.95  n/a     .000
                    +     1.0 02:KB-08-S        6.61    1.058 No_date   27:53   60.05  n/a     .000
                    +     1.0 02:KB-09          2.60     .665 No_date   28:00   71.90  n/a     .000
                    +     1.0 02:KB-10_1        2.37     .607 No_date   28:00   71.90  n/a     .000
                    +     1.0 02:KB-10_2        1.14     .295 No_date   28:00   71.90  n/a     .000
```

```
                     +     1.0 02:KB-12-S        4.86     .867 No_date   28:09   68.93  n/a     .000
                     +     1.0 02:KB-13-S       10.19    1.722 No_date   27:55   60.01  n/a     .000
                     +     1.0 02:KB-14-S        5.47     .873 No_date   27:53   60.02  n/a     .000
                     +     1.0 02:KB-16_2        3.42     .724 No_date   28:01   64.30  n/a     .000
                  SUM=     1.0 01:KB-P2        254.24   26.339 No_date   28:02   46.87  n/a     .000
R0050:C00274------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->     1.0 02:KB-P2        254.24   26.339 No_date   28:02   46.87  n/a     .000
                out <=     1.0 01:KB-P2R       253.10   17.634 No_date   28:09   46.87  n/a     .000
           overflow <=     1.0 03:KB-P2ovf       1.14    5.257 No_date   28:09   46.87  n/a     .000
     {MxStoUsed=.1109E+01  m3, TotOvfVol=.5351E-01  m3, N-Ovf=    1, TotDurOvf=    0.hrs}
R0050:C00275------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:KB-P2R       253.10   17.634 No_date   28:09   46.87  n/a     .000
                     +     1.0 02:KB-P2ovf       1.14    5.257 No_date   28:09   46.87  n/a     .000
                  SUM=     1.0 01:KB-Pond2     254.24   22.891 No_date   28:09   46.87  n/a     .000
R0050:C00276------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD               1.0 01:KB-Pond2     254.24   22.891 No_date   28:09   46.87  n/a     .000
      fname :KB-Pond2.0050
      remark:Total Flows at KB second pond
R0050:C00277------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-16_1         2.80     .624 No_date   28:00   66.65 .818     .000
      [XIMP=.75:TIMP=.75]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .16:SLPI= .30:LGI= 137.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00278------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:KB-Pond2     254.24   22.891 No_date   28:09   46.87  n/a     .000
                     +     1.0 02:KB-16_1        2.80     .624 No_date   28:00   66.65  n/a     .000
                  SUM=     1.0 01:KB-P3        257.04   23.147 No_date   28:09   47.08  n/a     .000
R0050:C00279------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->     1.0 02:KB-P3        257.04   23.147 No_date   28:09   47.08  n/a     .000
                out <=     1.0 01:KB-P3R         9.40     .051 No_date   17:13   47.07  n/a     .000
           overflow <=     1.0 03:KB-P3ovf     247.64   22.286 No_date   28:10   47.08  n/a     .000
     {MxStoUsed=.1988E-02  m3, TotOvfVol=.1166E+02  m3, N-Ovf=    1, TotDurOvf=   23.hrs}
R0050:C00280------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:KB-P3R         9.40     .051 No_date   17:13   47.07  n/a     .000
                     +     1.0 02:KB-P3ovf     247.64   22.286 No_date   28:10   47.08  n/a     .000
                  SUM=     1.0 01:KB-Pond3     257.04   22.337 No_date   28:10   47.08  n/a     .000
R0050:C00281------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD               1.0 01:KB-Pond3     257.04   22.337 No_date   28:10   47.08  n/a     .000
      fname :KB-Pond3.0050
      remark:Total Flows at KB third pond
#******************************************************************************
#    EXISTING / PROPOSED Subcatchments (Kennedy-Burnett SWM Facility (118080), SWM Modeling Approach, NOVATECH Report Ju
#    - TO FRASER-CLARKE DRAIN
#******************************************************************************
R0050:C00282------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:FC-01           8.03    1.483 No_date   28:01   49.52 .608     .000
      [XIMP=.47:TIMP=.47]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 231.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00283------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD        1.0 01:FC-01          8.03    1.483 No_date   28:01   49.52  n/a     .000
     Major System   /      1.0 02:FC-01-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \      1.0 03:FC-01-MN       8.03     .756 No_date   28:32   49.91  n/a     .000
      {MjSysSto=.4662E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00284------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:FC-01-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                     +     1.0 02:FC-01-MN       8.03     .756 No_date   27:51   49.91  n/a     .000
                  SUM=     1.0 01:FC-01-S        8.03     .756 No_date   27:51   49.91  n/a     .000
R0050:C00285------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:FC-02          16.05    3.831 No_date   28:00   75.92 .931     .000
      [XIMP=.93:TIMP=.93]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 327.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00286------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD        1.0 01:FC-02         16.05    3.831 No_date   28:00   75.92  n/a     .000
     Major System   /      1.0 02:FC-02-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \      1.0 03:FC-02-MN      16.05    1.159 No_date   27:43   75.94  n/a     .000
      {MjSysSto=.2348E+04, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00287------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:FC-02-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                     +     1.0 02:FC-02-MN      16.05    1.159 No_date   27:43   75.94  n/a     .000
                  SUM=     1.0 01:FC-02-S       16.05    1.159 No_date   27:43   75.94  n/a     .000
R0050:C00288------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:FC-03           7.37    1.540 No_date   28:00   59.28 .727     .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 222.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00289------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD        1.0 01:FC-03          7.37    1.540 No_date   28:00   59.28  n/a     .000
     Major System   /      1.0 02:FC-03-MJ        .02     .092 No_date   28:14   59.28  n/a     .000
     Minor System   \      1.0 03:FC-03-MN       7.35     .358 No_date   27:42   59.51  n/a     .000
      {MjSysSto=.1131E+04, TotOvfVol=.1375E+02, N-Ovf=    1, TotDurOvf=    0.hrs}
R0050:C00290------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:FC-03-MJ        .02     .092 No_date   28:14   59.28  n/a     .000
                     +     1.0 02:FC-03-MN       7.35     .358 No_date   27:42   59.51  n/a     .000
                  SUM=     1.0 01:FC-03-S        7.37     .450 No_date   28:14   59.51  n/a     .000
R0050:C00291------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:FC-04          12.87    2.587 No_date   28:01   59.28 .727     .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 293.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00292------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD        1.0 01:FC-04         12.87    2.587 No_date   28:01   59.28  n/a     .000
     Major System   /      1.0 02:FC-04-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \      1.0 03:FC-04-MN      12.87     .741 No_date   27:44   59.54  n/a     .000
      {MjSysSto=.1729E+04, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00293------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:FC-04-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                     +     1.0 02:FC-04-MN      12.87     .741 No_date   27:44   59.54  n/a     .000
                  SUM=     1.0 01:FC-04-S       12.87     .741 No_date   27:44   59.54  n/a     .000
#******************************************************************************
#    PROPOSED Subcatchments (Kennedy-Burnett SWM Facility (118080), SWM Modeling Approach, NOVATECH Report June, 2020)
#    - TO JOCK RIVER
#******************************************************************************
R0050:C00294------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:JR-01           8.24    1.714 No_date   28:00   59.28 .727     .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 234.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00295------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD        1.0 01:JR-01          8.24    1.714 No_date   28:00   59.28  n/a     .000
     Major System   /      1.0 02:JR-01-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \      1.0 03:JR-01-MN       8.24     .563 No_date   28:59   59.48  n/a     .000
      {MjSysSto=.9643E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00296------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:JR-01-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                     +     1.0 02:JR-01-MN       8.24     .563 No_date   27:44   59.48  n/a     .000
                  SUM=     1.0 01:JR-01-S        8.24     .563 No_date   27:44   59.48  n/a     .000
R0050:C00297------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:JR-02           1.59     .357 No_date   28:00   59.28 .727     .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 103.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0050:C00298------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD        1.0 01:JR-02          1.59     .357 No_date   28:00   59.28  n/a     .000
     Major System   /      1.0 02:JR-02-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \      1.0 03:JR-02-MN       1.59     .153 No_date   27:45   59.66  n/a     .000
      {MjSysSto=.1319E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00299------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:JR-02-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                     +     1.0 02:JR-02-MN       1.59     .153 No_date   27:45   59.66  n/a     .000
                  SUM=     1.0 01:JR-02-S        1.59     .153 No_date   27:45   59.66  n/a     .000
#******************************************************************************
#    Catchment FRASER
#    - To Fraser-Clarke drain (north of the Jock)
#    - Developed land with assumed 43% imp.
#    - 2020-12-17 Change Fraser area to be 35.1 as measured from QGIS
#    - 2020-12-17 All Fraser is undeveloped (Nashyd)
#******************************************************************************
R0050:C00300------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:FRASER-DRN    13.65     .711 No_date   28:22   39.91 .490     .000
      [CN= 77.0: N= 3.00: Tp=  .43]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0050:C00301------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:FRASER-D      21.61    3.688 No_date   28:01   62.97 .773     .000
      [XIMP=.58:TIMP=.58]
      [LOSS= 2 :CN= 80.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 380.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 26.32: SMAX=175.50: SK= .010]
R0050:C00302------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD        1.0 01:FRASER-D      21.61    3.688 No_date   28:01   62.97  n/a     .000
     Major System   /      1.0 02:FRASER-J        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \      1.0 03:FRASER-N      21.61    2.281 No_date   27:53   63.21  n/a     .000
      {MjSysSto=.7987E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00303------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:FRASER-J        .00     .000 No_date    0:00     .00  n/a     .000
                     +     1.0 02:FRASER-N      21.61    2.281 No_date   27:53   63.21  n/a     .000
                  SUM=     1.0 01:FRASER-S      21.61    2.281 No_date   27:53   63.21  n/a     .000
R0050:C00304------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:KB-Pond3     257.04   22.337 No_date   28:10   47.08  n/a     .000
                     +     1.0 02:S-1-B         55.36    2.770 No_date   28:23   39.91  n/a     .000
                     +     1.0 02:FRASER-DRN    13.65     .711 No_date   28:22   39.91  n/a     .000
                     +     1.0 02:FRASER-S      21.61    2.281 No_date   27:53   63.21  n/a     .000
                     +     1.0 02:N_KB       54279.41  125.695 No_date   36:19   33.96  n/a     .000
                     +     1.0 02:FC-01-S        8.03     .756 No_date   27:51   49.91  n/a     .000
                     +     1.0 02:FC-02-S       16.05    1.159 No_date   27:43   75.94  n/a     .000
                     +     1.0 02:FC-03-S        7.37     .450 No_date   28:14   59.51  n/a     .000
                  SUM=     1.0 01:4241       54658.52  126.368 No_date   36:19   34.06  n/a     .000
R0050:C00305------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD               1.0 01:4241       54658.52  126.368 No_date   36:19   34.06  n/a     .000
      fname :4241.0050
      remark:Total Flows at Ken-Burnett Outlet
# Hydrograph from Node Ken-Burnett to station 3633
# Channel X-Section obtained from RVCA Hydraulic Model - Station 4241
#
R0050:C00306------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->     1.0 02:4241       54658.52  126.368 No_date   36:19   34.06  n/a     .000
 *     [RDT= 1.00] out<-     1.0 01:4241-out   54658.52  127.099 No_date   36:18   34.06  n/a     .000
      [L/S/n=  294./ .109/.035]
      {Vmax= 1.330:Dmax= 2.427}
R0050:C00307------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:4241-out   54658.52  127.099 No_date   36:18   34.06  n/a     .000
                     +     1.0 02:FC-04-S       12.87     .741 No_date   27:44   59.54  n/a     .000
                     +     1.0 02:JR-01-S        8.24     .563 No_date   27:44   59.48  n/a     .000
                     +     1.0 02:JR-02-S        1.59     .153 No_date   27:45   59.66  n/a     .000
                  SUM=     1.0 01:SN_KB      54681.21  127.139 No_date   36:18   34.07  n/a     .000
R0050:C00308------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD               1.0 01:SN_KB      54681.21  127.139 No_date   36:18   34.07  n/a     .000
      fname :SN_KB.0050
      remark:Total Flows before Station 3633
# Hydrograph from Station 3633 to Node Todd
# Channel X-Section obtained from RVCA Hydraulic Model - Station 3633
# JFSA 2021-02-26 change the channel length (at station 3633) from 650m to 608m and change the slope from 0.0498% to 0.2
#
R0050:C00309------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->     1.0 02:SN_KB      54681.21  127.139 No_date   36:18   34.07  n/a     .000
     [RDT= 1.00] out<-     1.0 01:N_TO       54681.21  126.373 No_date   36:19   34.07  n/a     .000
      [L/S/n=  608./ .247/.035]
      {Vmax= 1.812:Dmax= 1.825}
#******************************************************************************
#    Catchment Greenbank
#    - To Greenbank Drain (south of the Jock)
#    - JFSA 2021-01-18 add Greenbank pond as per JFSA, P598(06)-15, June 2016
#    - JFSA 2021-01-19 update area from 37.479 ha to 36.6 ha based on GIS measurements
#******************************************************************************
R0050:C00310------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:Greenbank     36.60    6.286 No_date   28:02   65.04 .798     .000
      [XIMP=.64:TIMP=.68]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 494.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0050:C00311------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->     1.0 02:Greenbank     36.60    6.286 No_date   28:02   65.04  n/a     .000
                out <=     1.0 01:GreenB_MN     36.60    4.176 No_date   28:09   65.04  n/a     .000
           overflow <=     1.0 03:GreenB_MJ       .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.9063E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00312------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:N_TO       54681.21  126.373 No_date   36:19   34.07  n/a     .000
                     +     1.0 02:GreenB_MJ       .00     .000 No_date    0:00     .00  n/a     .000
                     +     1.0 02:GreenB_MN     36.60    4.176 No_date   28:09   65.04  n/a     .000
                  SUM=     1.0 01:GreenB     54717.81  126.537 No_date   36:19   34.09  n/a     .000
R0050:C00313------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD               1.0 01:GreenB     54717.81  126.537 No_date   36:19   34.09  n/a     .000
      fname :GreenB.0050
      remark:Total Flows at Greenbank Drain
#******************************************************************************
#    Catchment TODD
#    - To Todd Drain (south of the Jock)
#    - Subdivision with 43% imp. as per Barrhaven South MSS
#    - 2020-11-30 increase imp. based on P598(04)-11
#    - 2020-11-30 update TODD Tributary Drainage Area to  = 146.015 ha based on P598(04)-11
#    - 2020-11-30 split TODD Drainage Area to MAJOR, MINOR, POND and ALL
#******************************************************************************
#    - JFSA 2021-01-19 add "TODD_MN1" as part of Clarke("W_CLAR_MJ") and remove it from Todd
R0050:C00314------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:TODD_MN2       2.10     .384 No_date   28:00   60.14 .738     .000
      [XIMP=.53:TIMP=.57]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 118.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0050:C00315------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:TODD_MN3        .12     .022 No_date   28:00   60.13 .738     .000
      [XIMP=.53:TIMP=.57]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI=  28.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0050:C00316------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:TODD_MJ       30.23    4.894 No_date   28:02   61.85 .759     .000
      [XIMP=.52:TIMP=.64]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 449.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0050:C00317------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:TODD_ALL     112.91   15.270 No_date   28:04   59.95 .735     .000
      [XIMP=.52:TIMP=.57]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 868.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0050:C00318------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:TODD_P         3.06     .600 No_date   28:00   63.61 .780     .000
      [XIMP=.63:TIMP=.63]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 143.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
# 5-Year + 12% Capture
R0050:C00319------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->     1.0 02:TODD_MJ       30.23    4.894 No_date   28:02   61.85  n/a     .000
                out <=     1.0 01:TODD_MJn      28.89    3.314 No_date   27:54   61.87  n/a     .000
           overflow <=     1.0 03:TODD_MJj       1.34    1.567 No_date   28:02   61.85  n/a     .000
     {MxStoUsed=.1169E-02  m3, TotOvfVol=.8285E-01  m3, N-Ovf=    1, TotDurOvf=    0.hrs}
# 5-Year + 12% Capture
R0050:C00320------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->     1.0 02:TODD_MN2       2.10     .384 No_date   28:00   60.14  n/a     .000
                out <=     1.0 01:TODD_MN2n      2.02     .268 No_date   27:53   60.14  n/a     .000
           overflow <=     1.0 03:TODD_MN2j       .08     .111 No_date   28:00   60.14  n/a     .000
     {MxStoUsed=.1643E-03  m3, TotOvfVol=.4631E-02  m3, N-Ovf=    1, TotDurOvf=    0.hrs}
R0050:C00321------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->     1.0 02:TODD_MN3        .12     .022 No_date   28:00   60.13  n/a     .000
                out <=     1.0 01:TODD_MN3n       .11     .016 No_date   27:52   60.13  n/a     .000
           overflow <=     1.0 03:TODD_MN3j       .00     .006 No_date   28:00   60.13  n/a     .000
     {MxStoUsed=.8712E-04  m3, TotOvfVol=.2472E-03  m3, N-Ovf=    1, TotDurOvf=    0.hrs}
R0050:C00322------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A2            25.50    3.441 No_date   28:03   55.89 .686     .000
      [XIMP=.42:TIMP=.52]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 566.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0050:C00323------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD        1.0 01:A2            25.50    3.441 No_date   28:03   55.89  n/a     .000
     Major System   /      1.0 02:A2-MJ           .64    1.180 No_date   28:07   55.89  n/a     .000
     Minor System   \      1.0 03:A2-MN         24.86    1.818 No_date   28:39   56.08  n/a     .000
      {MjSysSto=.9240E+03, TotOvfVol=.3586E+03, N-Ovf=    1, TotDurOvf=    0.hrs}
R0050:C00324------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:TODD_MN2n      2.02     .268 No_date   27:53   60.14  n/a     .000
                     +     1.0 02:TODD_MN3n       .11     .016 No_date   27:52   60.13  n/a     .000
                     +     1.0 02:TODD_MJj       1.34    1.567 No_date   28:02   61.85  n/a     .000
                     +     1.0 02:TODD_P         3.06     .600 No_date   28:00   63.61  n/a     .000
                     +     1.0 02:TODD_ALL     112.91   15.270 No_date   28:04   59.95  n/a     .000
                     +     1.0 02:W_CLAR_MJn     1.70     .213 No_date   27:53   59.44  n/a     .000
                  SUM=     1.0 01:TODD         121.14   17.643 No_date   28:03   60.06  n/a     .000
R0050:C00325------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD               1.0 01:TODD         121.14   17.643 No_date   28:03   60.06  n/a     .000
      fname :TODD.0050
      remark:Total Flows at Todd Drain
#******************************************************************************
#    Todd Pond 3
#    - Rating curve obtained from Barrhaven South MSS modeling
#    - stantec 2007, Tributary Drainage Area to MSS Pond 3 = 193 ha
#******************************************************************************
R0050:C00326------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->     1.0 02:TODD         121.14   17.643 No_date   28:03   60.06  n/a     .000
                out <=     1.0 01:MS_P3        121.14   12.815 No_date   28:10   60.05  n/a     .000
           overflow <=     1.0 03:P3-OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.2728E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00327------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                1.0 02:GreenB     54717.81  126.537 No_date   36:19   34.09  n/a     .000
                     +     1.0 02:MS_P3        121.14   12.815 No_date   28:10   60.05  n/a     .000
                     +     1.0 02:P3-OVF          .00     .000 No_date    0:00     .00  n/a     .000
                     +     1.0 02:TODD_MN2j       .08     .111 No_date   28:00   60.14  n/a     .000
                     +     1.0 02:A2-MJ           .64    1.180 No_date   28:07   55.89  n/a     .000
                  SUM=     1.0 01:SN_TO      54839.66  126.938 No_date   36:19   34.15  n/a     .000
R0050:C00328------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD               1.0 01:SN_TO      54839.66  126.938 No_date   36:19   34.15  n/a     .000
      fname :SN_TO.0050
      remark:Total Flows at Todd Drain
#
# Hydrograph from Todd Drain routed to Corrigan Drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 2462
# 2021-02-19 Change the slope from 0.033 % (as per Stantec Report 2007) to 0.05 % so the model will be more stable and g
R0050:C00329------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->     1.0 02:SN_TO      54839.66  126.938 No_date   36:19   34.15  n/a     .000
 *   [RDT= 1.00] out<-     1.0 01:N_TO       54839.66  126.544 No_date   36:50   34.15  n/a     .000
      [L/S/n=  280./ .050/.045]
      {Vmax=  .888:Dmax= 3.469}
R0050:C00330------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD               1.0 01:N_TO       54839.66  126.544 No_date   36:50   34.15  n/a     .000
      fname :N_TO.0050
      remark:Total inflows at Station 2462
#******************************************************************************
#    Catchment CORRIG
#    - To Corrigan Drain (south of the Jock)
#    - Primarily Developed (medium density)
#    - JFSA JAN 2021, add Corrigan subcatchments as per IBI, July 2008
```

```
#**************************************************************************
R0050:C00331------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:corr1         15.87    2.851 No_date   28:01   63.61 .780      .000
      [XIMP=.63:TIMP=.63]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 325.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0050:C00332------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:corr1         15.87    2.851 No_date   28:01   63.61  n/a      .000
     Major System   /     1.0 02:corr1-MJ        .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:corr1-MN      15.87    1.818 No_date   28:19   63.67  n/a      .000
      {MjSysSto=.5297E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00333------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:corr2         12.47     .330 No_date   29:10   39.91 .490      .000
      [CN= 77.0: N= 3.00: Tp= 1.10]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0050:C00334------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A1-Corrig     15.75    2.330 No_date   28:01   55.89 .686      .000
      [XIMP=.42:TIMP=.52]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 324.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0050:C00335------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A1-Corrig     15.75    2.330 No_date   28:01   55.89  n/a      .000
     Major System   /     1.0 02:A1-MJ           .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:A1-MN         15.75    1.818 No_date   27:56   56.07  n/a      .000
      {MjSysSto=.1953E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00336------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:B1             2.77     .119 No_date   28:09   24.96 .306      .000
      [CN= 56.0: N= 3.00: Tp=  .23]
      [IaREC= 4.00: SMIN= 79.69: SMAX=531.24: SK= .010]
      [InterEventTime=  12.00]
R0050:C00337------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A4             1.27     .239 No_date   28:00   63.95 .785      .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 253.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0050:C00338------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A4             1.27     .239 No_date   28:00   63.95  n/a      .000
     Major System   /     1.0 02:A4-MJ           .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:A4-MN          1.27     .239 No_date   28:00   63.95  n/a      .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00339------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:A1-MJ           .00     .000 No_date    0:00     .00  n/a      .000
                   +      1.0 02:A1-MN         15.75    1.818 No_date   27:56   56.07  n/a      .000
                   +      1.0 02:corr1-MJ        .00     .000 No_date    0:00     .00  n/a      .000
                   +      1.0 02:corr1-MN      15.87    1.818 No_date   28:19   63.67  n/a      .000
                   +      1.0 02:corr2         12.47     .330 No_date   29:10   39.91  n/a      .000
                   +      1.0 02:B1             2.77     .119 No_date   28:09   24.96  n/a      .000
                   +      1.0 02:A4-MN          1.27     .239 No_date   28:00   63.95  n/a      .000
                SUM=      1.0 01:MH101         48.13    4.028 No_date   28:02   52.81  n/a      .000
R0050:C00340------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH101         48.13    4.028 No_date   28:02   52.81  n/a      .000
      fname :MH101.0050
      remark:Total Flows at MH101
R0050:C00341------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH101         48.13    4.028 No_date   28:02   52.81  n/a      .000
 *   [RDT= 1.00] out<-    1.0 01:101-102       48.13    4.005 No_date   28:03   52.81  n/a      .000
      [L/S/n=  368./ .540/.013]
      {Vmax= 3.143:Dmax= 1.119}
      [Din= 1.05:Dused= 1.36}
R0050:C00342------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:A2-MN         24.86    1.818 No_date   28:39   56.08  n/a      .000
                   +      1.0 02:101-102       48.13    4.005 No_date   28:03   52.81  n/a      .000
                SUM=      1.0 01:MH102         72.99    5.823 No_date   28:03   53.92  n/a      .000
R0050:C00343------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH102         72.99    5.823 No_date   28:03   53.92  n/a      .000
      fname :MH102.0050
      remark:Total Flows at MH102
R0050:C00344------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A5             1.60     .312 No_date   28:01   66.69 .818      .000
      [XIMP=.71:TIMP=.71]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 300.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0050:C00345------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:A4-MJ           .00     .000 No_date    0:00     .00  n/a      .000
                   +      1.0 02:A5             1.60     .312 No_date   28:01   66.69  n/a      .000
                SUM=      1.0 01:A5T            1.60     .312 No_date   28:01   66.69  n/a      .000
R0050:C00346------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A5T            1.60     .312 No_date   28:01   66.69  n/a      .000
     Major System   /     1.0 02:A5-MJ           .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:A5-MN          1.60     .312 No_date   28:01   66.69  n/a      .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00347------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH102         72.99    5.823 No_date   28:03   53.92  n/a      .000
 *   [RDT= 1.00] out<-    1.0 01:102-103       72.99    5.773 No_date   28:14   53.92  n/a      .000
      [L/S/n=  504./ .280/.013]
      {Vmax= 2.694:Dmax= 1.453}
      [Din= 1.50:Dused= 1.77}
R0050:C00348------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:102-103       72.99    5.773 No_date   28:14   53.92  n/a      .000
                   +      1.0 02:A5-MN          1.60     .312 No_date   28:01   66.69  n/a      .000
                SUM=      1.0 01:MH103         74.59    5.961 No_date   28:03   54.19  n/a      .000
R0050:C00349------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH103         74.59    5.961 No_date   28:03   54.19  n/a      .000
      fname :MH103.0050
      remark:Total Flows at MH103
R0050:C00350------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH103         74.59    5.961 No_date   28:03   54.19  n/a      .000
     [RDT= 1.00] out<-    1.0 01:103-104       74.59    5.915 No_date   28:07   54.19  n/a      .000
      [L/S/n=  438./ .460/.013]
      {Vmax= 3.295:Dmax= 1.301}
      [Din= 1.65:Dused= 1.65}
R0050:C00351------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A6             1.56     .306 No_date   28:00   66.69 .818      .000
      [XIMP=.71:TIMP=.71]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 280.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0050:C00352------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:A5-MJ           .00     .000 No_date    0:00     .00  n/a      .000
                   +      1.0 02:A6             1.56     .306 No_date   28:00   66.69  n/a      .000
                SUM=      1.0 01:A6T            1.56     .306 No_date   28:00   66.69  n/a      .000
R0050:C00353------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A6T            1.56     .306 No_date   28:00   66.69  n/a      .000
     Major System   /     1.0 02:A6-MJ           .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:A6-MN          1.56     .306 No_date   28:00   66.69  n/a      .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00354------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:A6-MN          1.56     .306 No_date   28:00   66.69  n/a      .000
                   +      1.0 02:103-104       74.59    5.915 No_date   28:07   54.19  n/a      .000
                   +      1.0 02:TODD_MJn      28.89    3.314 No_date   27:54   61.87  n/a      .000
                SUM=      1.0 01:MH104        105.04    9.444 No_date   28:04   56.49  n/a      .000
R0050:C00355------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH104        105.04    9.444 No_date   28:04   56.49  n/a      .000
      fname :MH104.0050
      remark:Total Flows at MH104
R0050:C00356------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:B2            12.31    1.758 No_date   28:02   56.26 .690      .000
      [XIMP=.41:TIMP=.54]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 417.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0050:C00357------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:B2            12.31    1.758 No_date   28:02   56.26  n/a      .000
     Major System   /     1.0 02:B2-MJ           .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:B2-MN         12.31    1.029 No_date   27:53   56.54  n/a      .000
      {MjSysSto=.4799E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00358------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:B2-MN         12.31    1.029 No_date   27:53   56.54  n/a      .000
 *   [RDT= 1.00] out<-    1.0 01:315-333       12.31    1.029 No_date   28:33   56.54  n/a      .000
      [L/S/n=  254./ .100/.013]
      {Vmax= 1.220:Dmax=  .838}
      [Din= 1.20:Dused= 1.20}
R0050:C00359------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:B3             5.59     .825 No_date   28:01   56.26 .690      .000
      [XIMP=.41:TIMP=.54]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 345.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0050:C00360------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:B3             5.59     .825 No_date   28:01   56.26  n/a      .000
     Major System   /     1.0 02:B3-MJ           .02     .083 No_date   28:09   56.26  n/a      .000
     Minor System   \     1.0 03:B3-MN          5.57     .459 No_date   27:52   56.28  n/a      .000
      {MjSysSto=.2270E+03, TotOvfVol=.1279E+02, N-Ovf=    1, TotDurOvf=    0.hrs}
R0050:C00361------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:B3-MN          5.57     .459 No_date   27:52   56.28  n/a      .000
                   +      1.0 02:315-333       12.31    1.029 No_date   28:33   56.54  n/a      .000
                SUM=      1.0 01:MH333         17.88    1.488 No_date   28:32   56.46  n/a      .000
R0050:C00362------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH333         17.88    1.488 No_date   28:32   56.46  n/a      .000
      fname :MH333.0050
      remark:Total Flows at MH333
R0050:C00363------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH333         17.88    1.488 No_date   28:32   56.46  n/a      .000
 *   [RDT= 1.00] out<-    1.0 01:333-335       17.88    1.479 No_date   28:19   56.46  n/a      .000
      [L/S/n=  251./ .100/.013]
      {Vmax= 1.302:Dmax= 1.057}
      [Din= 1.20:Dused= 1.29}
R0050:C00364------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:333-335       17.88    1.479 No_date   28:19   56.46  n/a      .000
 *   [RDT= 1.00] out<-    1.0 01:335-338       17.88    1.478 No_date   28:16   56.46  n/a      .000
      [L/S/n=  185./ .100/.013]
      {Vmax= 1.300:Dmax= 1.054}
      [Din= 1.20:Dused= 1.28}
R0050:C00365------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:335-338       17.88    1.478 No_date   28:16   56.46  n/a      .000
     [RDT= 1.00] out<-    1.0 01:338-340       17.88    1.454 No_date   28:18   56.46  n/a      .000
      [L/S/n=  233./ .100/.013]
      {Vmax= 1.330:Dmax=  .979}
      [Din= 1.35:Dused= 1.35}
R0050:C00366------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:B4             7.60    1.094 No_date   28:02   56.26 .690      .000
      [XIMP=.41:TIMP=.54]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 388.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0050:C00367------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:B4             7.60    1.094 No_date   28:02   56.26  n/a      .000
     Major System   /     1.0 02:B4-MJ           .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:B4-MN          7.60     .655 No_date   27:53   56.27  n/a      .000
      {MjSysSto=.2780E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00368------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:338-340       17.88    1.454 No_date   28:18   56.46  n/a      .000
                   +      1.0 02:B4-MN          7.60     .655 No_date   27:53   56.27  n/a      .000
                SUM=      1.0 01:MH340         25.48    2.109 No_date   28:18   56.41  n/a      .000
R0050:C00369------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH340         25.48    2.109 No_date   28:18   56.41  n/a      .000
      fname :MH340.0050
      remark:Total Flows at MH340
R0050:C00370------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH340         25.48    2.109 No_date   28:18   56.41  n/a      .000
     [RDT= 1.00] out<-    1.0 01:340-104       25.48    2.090 No_date   28:18   56.41  n/a      .000
      [L/S/n=  240./ .150/.013]
      {Vmax= 1.723:Dmax=  .918}
      [Din= 1.65:Dused= 1.65}
R0050:C00371------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:340-104       25.48    2.090 No_date   28:18   56.41  n/a      .000
                   +      1.0 02:MH104        105.04    9.444 No_date   28:04   56.49  n/a      .000
                SUM=      1.0 01:MH104T       130.52   11.391 No_date   28:07   56.48  n/a      .000
R0050:C00372------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH104T       130.52   11.391 No_date   28:07   56.48  n/a      .000
 *   [RDT= 1.00] out<-    1.0 01:104-105      130.52   11.118 No_date   28:10   56.48  n/a      .000
      [L/S/n=  380./ .100/.013]
      {Vmax= 2.107:Dmax= 2.003}
      {HGTH= 2.36:WDTH= 2.70}
R0050:C00373------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:B5             2.20     .390 No_date   28:00   60.29 .740      .000
      [XIMP=.57:TIMP=.57]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 187.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0050:C00374------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:B5             2.20     .390 No_date   28:00   60.29  n/a      .000
     Major System   /     1.0 02:B5-MJ           .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:B5-MN          2.20     .260 No_date   27:53   60.60  n/a      .000
      {MjSysSto=.5913E+02, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00375------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A8              .96     .198 No_date   28:00   66.69 .818      .000
      [XIMP=.71:TIMP=.71]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 186.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0050:C00376------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:A6-MJ           .00     .000 No_date    0:00     .00  n/a      .000
                   +      1.0 02:A8              .96     .198 No_date   28:00   66.69  n/a      .000
                SUM=      1.0 01:A8T             .96     .198 No_date   28:00   66.69  n/a      .000
R0050:C00377------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A8T             .96     .198 No_date   28:00   66.69  n/a      .000
     Major System   /     1.0 02:A8-MJ           .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:A8-MN           .96     .198 No_date   28:00   66.69  n/a      .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00378------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:104-105      130.52   11.118 No_date   28:10   56.48  n/a      .000
                   +      1.0 02:B5-MN          2.20     .260 No_date   27:53   60.60  n/a      .000
                   +      1.0 02:A8-MN           .96     .198 No_date   28:00   66.69  n/a      .000
                   +      1.0 02:TODD_MN3j       .00     .006 No_date   28:00   60.13  n/a      .000
                SUM=      1.0 01:MH105        133.68   11.441 No_date   28:10   56.62  n/a      .000
R0050:C00379------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH105        133.68   11.441 No_date   28:10   56.62  n/a      .000
      fname :MH105.0050
      remark:Total Flows at MH105
R0050:C00380------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
 *  DIVERT HYD      ->    1.0 01:A8-MJ           .00     .000 No_date    0:00     .00  n/a      .000
          diverted <=     1.0 02:A8-MJ-JR        .00     .000 No_date    0:00     .00  n/a      .000
          diverted <=     1.0 03:A8-MJ-B6        .00     .000 No_date    0:00     .00  n/a      .000
R0050:C00381------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    DIVERT HYD      ->    1.0 01:MH105        133.68   11.441 No_date   28:10   56.62  n/a      .000
          diverted <=     1.0 02:MH105-JR      35.42    8.432 No_date   28:10   56.62  n/a      .000
          diverted <=     1.0 03:MH105-B6      98.26    3.009 No_date   28:10   56.62  n/a      .000
R0050:C00382------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:B7             7.19    1.124 No_date   28:01   56.26 .690      .000
      [XIMP=.41:TIMP=.54]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 211.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0050:C00383------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:B4-MJ           .00     .000 No_date    0:00     .00  n/a      .000
                   +      1.0 02:B7             7.19    1.124 No_date   28:01   56.26  n/a      .000
                SUM=      1.0 01:B7-B4MJ        7.19    1.124 No_date   28:01   56.26  n/a      .000
R0050:C00384------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:B7-B4MJ        7.19    1.124 No_date   28:01   56.26  n/a      .000
     Major System   /     1.0 02:B7R-MJ          .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:B7R-MN         7.19     .629 No_date   27:51   56.37  n/a      .000
      {MjSysSto=.2888E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00385------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:B7R-MN         7.19     .629 No_date   27:51   56.37  n/a      .000
 *   [RDT= 1.00] out<-    1.0 01:360-106A       7.19     .629 No_date   28:28   56.37  n/a      .000
      [L/S/n=  167./ .100/.013]
      {Vmax= 1.089:Dmax=  .665}
      [Din= 1.05:Dused= 1.05}
R0050:C00386------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:B6             3.29     .535 No_date   28:00   56.26 .690      .000
      [XIMP=.41:TIMP=.54]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 148.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0050:C00387------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:B6             3.29     .535 No_date   28:00   56.26  n/a      .000
     Major System   /     1.0 02:B6-MJ           .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:B6-MN          3.29     .064 No_date   27:33   56.32  n/a      .000
      {MjSysSto=.6238E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00388------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:EX-LAND       32.50    4.637 No_date   28:02   56.33 .691      .000
      [XIMP=.50:TIMP=.50]
      [LOSS= 2 :CN= 74.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 465.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 36.67: SMAX=244.49: SK= .010]
R0050:C00389------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:EX-LAND       32.50    4.637 No_date   28:02   56.33  n/a      .000
     Major System   /     1.0 02:EX-LAND-MJ      .76    1.533 No_date   28:06   56.33  n/a      .000
     Minor System   \     1.0 03:EX-LAND-MN    31.74    2.275 No_date   27:49   56.55  n/a      .000
      {MjSysSto=.1365E+04, TotOvfVol=.4274E+03, N-Ovf=    1, TotDurOvf=    0.hrs}
R0050:C00390------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:B7R-MJ          .00     .000 No_date    0:00     .00  n/a      .000
                   +      1.0 02:EX-LAND-MJ      .76    1.533 No_date   28:06   56.33  n/a      .000
                   +      1.0 02:B5-MJ           .00     .000 No_date    0:00     .00  n/a      .000
                   +      1.0 02:B6-MJ           .00     .000 No_date    0:00     .00  n/a      .000
                   +      1.0 02:B6-MN          3.29     .064 No_date   27:33   56.32  n/a      .000
                   +      1.0 02:A8-MJ-B6        .00     .000 No_date    0:00     .00  n/a      .000
                SUM=      1.0 01:B6-B7ExMJ      4.05    1.597 No_date   28:06   56.32  n/a      .000
R0050:C00391------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:B6-B7ExMJ      4.05    1.597 No_date   28:06   56.32  n/a      .000
     Major System   /     1.0 02:B6R-MJ          .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:B6R-MN         4.05     .064 No_date   27:33   56.36  n/a      .000
      {MjSysSto=.4274E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00392------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH105-B6      98.26    3.009 No_date   28:10   56.62  n/a      .000
     [RDT= 1.00] out<-    1.0 01:105-106A      98.26    3.009 No_date   28:07   56.62  n/a      .000
      [L/S/n=  208./ .100/.013]
      {Vmax= 1.597:Dmax= 1.249}
      [Din= 1.80:Dused= 1.80}
R0050:C00393------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:360-106A       7.19     .629 No_date   28:28   56.37  n/a      .000
                   +      1.0 02:105-106A      98.26    3.009 No_date   28:07   56.62  n/a      .000
                   +      1.0 02:B6R-MN         4.05     .064 No_date   27:33   56.36  n/a      .000
                   +      1.0 02:B6R-MJ          .00     .000 No_date    0:00     .00  n/a      .000
                SUM=      1.0 01:MH106A       109.50    3.701 No_date   28:10   56.59  n/a      .000
R0050:C00394------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH106A       109.50    3.701 No_date   28:10   56.59  n/a      .000
      fname :MH106A.0050
      remark:Total Flows at MH106A
R0050:C00395------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH106A       109.50    3.701 No_date   28:10   56.59  n/a      .000
 *   [RDT= 1.00] out<-    1.0 01:106A-106     109.50    3.702 No_date   27:59   56.59  n/a      .000
      [L/S/n=  190./ .100/.013]
      {Vmax= 1.635:Dmax= 1.487}
      [Din= 1.80:Dused= 1.81}
R0050:C00396------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A9             2.44     .481 No_date   28:00   66.69 .818      .000
      [XIMP=.71:TIMP=.71]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 262.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
```

```
         [SMIN= 33.81: SMAX=225.43: SK= .010]
R0050:C00397------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A9              2.44     .481 No_date   28:00   66.69  n/a      .000
     Major System   /     1.0 02:A9-MJ            .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:A9-MN           2.44     .481 No_date   28:00   66.69  n/a      .000
R0050:C00398------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:106A-106      109.50    3.702 No_date   27:59   56.59  n/a      .000
                     +    1.0 02:A9-MN           2.44     .481 No_date   28:00   66.69  n/a      .000
                  SUM=    1.0 01:MH106         111.94    4.177 No_date   28:00   56.81  n/a      .000
R0050:C00399------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH106         111.94    4.177 No_date   28:00   56.81  n/a      .000
      fname :MH106.0050
      remark:Total Flows at MH106
R0050:C00400------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH106         111.94    4.177 No_date   28:00   56.81  n/a      .000
 *   [RDT= 1.00] out<-    1.0 01:106-107       111.94    4.129 No_date   28:00   56.81  n/a      .000
      [L/S/n=  123./ .100/.013]
      {Vmax= 1.685:Dmax= 1.556}
      [Din= 1.80:Dused= 1.90}
R0050:C00401------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A10             4.14     .602 No_date   28:01   53.20 .653      .000
      [XIMP=.35:TIMP=.47]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 183.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0050:C00402------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A10             4.14     .602 No_date   28:01   53.20  n/a      .000
     Major System   /     1.0 02:A10-MJ           .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:A10-MN          4.14     .310 No_date   27:50   53.25  n/a      .000
      {MjSysSto=.1897E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00403------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A11            10.61    1.720 No_date   28:02   60.69 .745      .000
      [XIMP=.53:TIMP=.62]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 379.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0050:C00404------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A11            10.61    1.720 No_date   28:02   60.69  n/a      .000
     Major System   /     1.0 02:A11-MJ           .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:A11-MN         10.61     .993 No_date   27:52   60.86  n/a      .000
      {MjSysSto=.4540E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00405------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:106-107       111.94    4.129 No_date   28:00   56.81  n/a      .000
                     +    1.0 02:A10-MN          4.14     .310 No_date   27:50   53.25  n/a      .000
                     +    1.0 02:A11-MN         10.61     .993 No_date   27:52   60.86  n/a      .000
                  SUM=    1.0 01:MH107         126.69    5.432 No_date   28:00   57.03  n/a      .000
R0050:C00406------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH107         126.69    5.432 No_date   28:00   57.03  n/a      .000
      fname :MH107.0050
      remark:Total Flows at MH107
R0050:C00407------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH107         126.69    5.432 No_date   28:00   57.03  n/a      .000
 *   [RDT= 1.00] out<-    1.0 01:107-119       126.69    5.345 No_date   28:00   57.03  n/a      .000
      [L/S/n=  114./ .120/.013]
      {Vmax= 1.927:Dmax= 1.660}
      [Din= 1.80:Dused= 2.02}
R0050:C00408------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:107-119       126.69    5.345 No_date   28:00   57.03  n/a      .000
 *   [RDT= 1.00] out<-    1.0 01:119-108       126.69    5.334 No_date   28:01   57.03  n/a      .000
      [L/S/n=   66./ .120/.013]
      {Vmax= 1.919:Dmax= 1.650}
      [Din= 1.80:Dused= 2.01}
R0050:C00409------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A12            12.29    1.938 No_date   28:01   56.26 .690      .000
      [XIMP=.41:TIMP=.54]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 183.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0050:C00410------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A12            12.29    1.938 No_date   28:01   56.26  n/a      .000
     Major System   /     1.0 02:A12-MJ           .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:A12-MN         12.29    1.029 No_date   27:50   56.44  n/a      .000
      {MjSysSto=.5545E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00411------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A13             2.59     .487 No_date   28:01   66.69 .818      .000
      [XIMP=.71:TIMP=.71]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 379.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0050:C00412------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A13             2.59     .487 No_date   28:01   66.69  n/a      .000
     Major System   /     1.0 02:A13-MJ           .00     .000 No_date    0:00     .00  n/a      .000
     Minor System   \     1.0 03:A13-MN          2.59     .487 No_date   28:01   66.69  n/a      .000
R0050:C00413------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:Pond-Block      2.94     .430 No_date   28:00   53.21 .653      .000
      [XIMP=.41:TIMP=.41]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 183.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0050:C00414------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:119-108       126.69    5.334 No_date   28:01   57.03  n/a      .000
                     +    1.0 02:A13-MN          2.59     .487 No_date   28:01   66.69  n/a      .000
                     +    1.0 02:A12-MN         12.29    1.029 No_date   27:50   56.44  n/a      .000
                  SUM=    1.0 01:MH108         141.57    6.850 No_date   28:01   57.16  n/a      .000
R0050:C00415------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH108         141.57    6.850 No_date   28:01   57.16  n/a      .000
      fname :MH108.0050
      remark:Total Flows at MH108
R0050:C00416------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH108         141.57    6.850 No_date   28:01   57.16  n/a      .000
 *   [RDT= 1.00] out<-    1.0 01:108-116       141.57    6.810 No_date   28:02   57.16  n/a      .000
      [L/S/n=   77./ .130/.013]
      {Vmax= 2.104:Dmax= 1.784}
      [Din= 1.80:Dused= 2.17}
R0050:C00417------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:108-116       141.57    6.810 No_date   28:02   57.16  n/a      .000
 *   [RDT= 1.00] out<-    1.0 01:116-corrig    141.57    6.771 No_date   28:02   57.16  n/a      .000
      [L/S/n=   80./ .130/.013]
      {Vmax= 2.101:Dmax= 1.780}
      [Din= 1.80:Dused= 2.17}
R0050:C00418------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:116-corrig    141.57    6.771 No_date   28:02   57.16  n/a      .000
                     +    1.0 02:Pond-Block      2.94     .430 No_date   28:00   53.21  n/a      .000
                  SUM=    1.0 01:Corrigan      144.51    7.185 No_date   28:02   57.08  n/a      .000
R0050:C00419------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:Corrigan      144.51    7.185 No_date   28:02   57.08  n/a      .000
      fname :Corrigan.0050
      remark:HYD_COMMENT=["Total Flows at Corrigan Pond]
R0050:C00420------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:Corrigan      144.51    7.185 No_date   28:02   57.08  n/a      .000
                out <=    1.0 01:Co-P          144.51    6.335 No_date   28:26   57.08  n/a      .000
           overflow <=    1.0 03:Co-P-OVF         .00     .000 No_date    0:00     .00  n/a      .000
     {MxStoUsed=.1027E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00421------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:Co-P-OVF         .00     .000 No_date    0:00     .00  n/a      .000
                     +    1.0 02:Co-P          144.51    6.335 No_date   28:26   57.08  n/a      .000
                     +    1.0 02:N_TO        54839.66  126.544 No_date   36:50   34.15  n/a      .000
                     +    1.0 02:MH105-JR       35.42    8.432 No_date   28:10   56.62  n/a      .000
                     +    1.0 02:A8-MJ-JR         .00     .000 No_date    0:00     .00  n/a      .000
                     +    1.0 02:A9-MJ            .00     .000 No_date    0:00     .00  n/a      .000
                     +    1.0 02:A10-MJ           .00     .000 No_date    0:00     .00  n/a      .000
                     +    1.0 02:A11-MJ           .00     .000 No_date    0:00     .00  n/a      .000
                     +    1.0 02:A12-MJ           .00     .000 No_date    0:00     .00  n/a      .000
                     +    1.0 02:A13-MJ           .00     .000 No_date    0:00     .00  n/a      .000
                  SUM=    1.0 01:corrig      55019.59  127.077 No_date   36:49   34.22  n/a      .000
R0050:C00422------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:corrig      55019.59  127.077 No_date   36:49   34.22  n/a      .000
      fname :corrig.0050
      remark:Total Flows at Corrigan Pond
#*****************************************************************************
#    Corrigan Pond 1
#    - Rating curve obtained from Barrhaven South MSS modeling
#    - Tributary Drainage Area to MSS Pond 1 = 145 ha
#*****************************************************************************
#
# Hydrograph from Corrigan Drain routed to Jockvale Road
# Channel X-Section obtained from RVCA Hydraulic Model - Station 2462
#
R0050:C00423------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:corrig      55019.59  127.077 No_date   36:49   34.22  n/a      .000
     [RDT= 1.00] out<-    1.0 01:N_MI        55019.59  127.062 No_date   36:52   34.22  n/a      .000
      [L/S/n=  580./ .445/.045]
      {Vmax= 2.066:Dmax= 1.982}
#*****************************************************************************
#    Catchment MILLS
#    - To SWM Facility north of the Jock
#    - Primarily residental development
#*****************************************************************************
R0050:C00424------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:MILLS         175.99   17.756 No_date   28:06   50.66 .622      .000
      [XIMP=.38:TIMP=.38]
      [LOSS= 2 :CN= 74.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI=1118.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 36.67: SMAX=244.49: SK= .010]
#*****************************************************************************
#    Chapman Mills SWM Pond
#    - Rating curve obtained from CCL hydraulic modeling
#*****************************************************************************
R0050:C00425------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:MILLS         175.99   17.756 No_date   28:06   50.66  n/a      .000
                out <=    1.0 01:MILL_P        153.87    4.050 No_date   28:11   50.66  n/a      .000
           overflow <=    1.0 03:MIL-OV         22.12   12.440 No_date   28:11   50.66  n/a      .000
     {MxStoUsed=.2310E+01  m3, TotOvfVol=.1121E+01  m3, N-Ovf=    2, TotDurOvf=    1.hrs}
R0050:C00426------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N_MI        55019.59  127.062 No_date   36:52   34.22  n/a      .000
                     +    1.0 02:MIL-OV         22.12   12.440 No_date   28:11   50.66  n/a      .000
                     +    1.0 02:MILL_P        153.87    4.050 No_date   28:11   50.66  n/a      .000
                  SUM=    1.0 01:SN_MI       55195.58  127.649 No_date   36:50   34.28  n/a      .000
R0050:C00427------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_MI       55195.58  127.649 No_date   36:50   34.28  n/a      .000
      fname :SN_MI.0050
      remark:Total Flows at Jockvale Road
#
# Hydrograph from Jockvale Road routed to Heart's Desire
# Channel X-Section obtained from RVCA Hydraulic Model - Station 689
#
R0050:C00428------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_MI       55195.58  127.649 No_date   36:50   34.28  n/a      .000
     [RDT= 1.00] out<-    1.0 01:N_DE        55195.58  127.340 No_date   37:05   34.28  n/a      .000
      [L/S/n= 1962./ .223/.045]
      {Vmax= 1.577:Dmax= 2.491}
#*****************************************************************************
#    Catchment DESIRE
#    - To Jock River (north of the Jock)
#    - Rural-estate subdivision (Heart's Desire Community)
#*****************************************************************************
R0050:C00429------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:DESIRE         23.78    2.563 No_date   28:03   46.85 .575      .000
      [XIMP=.25:TIMP=.25]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 400.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
#*****************************************************************************
#    Catchment JOCKVA
#    - To Jockvale SWM Facility
#    - Residential development & golf course
#    - JFSA 2021-01-11 update JOCKVA after updating CORRIG as per IBI GROUP, July 2008.
#      JOCKVA area became 225.13 ha instead of 257.63 ha. JOCKVA separated into two areas JOCKVA and EX-LAND 32.5 ha as
#*****************************************************************************
R0050:C00430------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:JOCKVA        225.13   25.253 No_date   28:07   56.33 .691      .000
      [XIMP=.50:TIMP=.50]
      [LOSS= 2 :CN= 74.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI=1311.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 36.67: SMAX=244.49: SK= .010]
R0050:C00431------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:EX-LAND-MN     31.74    2.275 No_date   27:49   56.55  n/a      .000
                     +    1.0 02:JOCKVA        225.13   25.253 No_date   28:07   56.33  n/a      .000
                     +    1.0 02:B2-MJ            .00     .000 No_date    0:00     .00  n/a      .000
                     +    1.0 02:B3-MJ            .02     .083 No_date   28:09   56.26  n/a      .000
                  SUM=    1.0 01:JOCKVA-TO     256.89   27.528 No_date   28:07   56.36  n/a      .000
R0050:C00432------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:JOCKVA-TO     256.89   27.528 No_date   28:07   56.36  n/a      .000
      fname :JOCKVA-TO.0050
      remark:Total Flows at KB first pond
#*****************************************************************************
#    Jockvale SWM Facility
#    - Rating curve obtained from Jockvale Servicing Study (CCL 1999)
#*****************************************************************************
R0050:C00433------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:JOCKVA-TO     256.89   27.528 No_date   28:07   56.36  n/a      .000
                out <=    1.0 01:JOCK_P        256.89   10.991 No_date   28:38   56.36  n/a      .000
           overflow <=    1.0 03:JO-OVF           .00     .000 No_date    0:00     .00  n/a      .000
     {MxStoUsed=.5928E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0050:C00434------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N_DE        55195.58  127.340 No_date   37:05   34.28  n/a      .000
                     +    1.0 02:DESIRE         23.78    2.563 No_date   28:03   46.85  n/a      .000
                     +    1.0 02:JO-OVF           .00     .000 No_date    0:00     .00  n/a      .000
                     +    1.0 02:JOCK_P        256.89   10.991 No_date   28:38   56.36  n/a      .000
                  SUM=    1.0 01:SN_DE       55476.26  128.229 No_date   37:04   34.38  n/a      .000
R0050:C00435------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_DE       55476.26  128.229 No_date   37:04   34.38  n/a      .000
      fname :SN_DE.0050
      remark:Total Flows at Heart's Desire
#
# Hydrograph from Heart's Desire routed to Rideau River
# Channel X-Section obtained from RVCA Hydraulic Model - Station 0
#
R0050:C00436------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_DE       55476.26  128.229 No_date   37:04   34.38  n/a      .000
     [RDT= 1.00] out<-    1.0 01:N1          55476.26  128.215 No_date   37:08   34.38  n/a      .000
      [L/S/n=  563./ .967/.045]
      {Vmax= 2.123:Dmax= 1.249}
#*****************************************************************************
#    Catchment S-2
#    - To Jock River (north and south)
#    - Undeveloped floodplain and river
#*****************************************************************************
R0050:C00437------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:S-2           102.94    4.795 No_date   28:20   35.39 .434      .000
      [CN= 72.0: N= 3.00: Tp=  .40]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
R0050:C00438------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N1          55476.26  128.215 No_date   37:08   34.38  n/a      .000
                     +    1.0 02:S-2           102.94    4.795 No_date   28:20   35.39  n/a      .000
                  SUM=    1.0 01:SN_N1       55579.20  128.451 No_date   37:07   34.38  n/a      .000
R0050:C00439------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_N1       55579.20  128.451 No_date   37:07   34.38  n/a      .000
      fname :SN_N1.0050
      remark:Total Flows at Rideau River
#############################################################################
  ** END OF RUN :   99

***************************************************************************************************





 RUN#:COMMAND#
R0100:C00001--------------------------------------------------------------------------------------
     START
      [TZERO =    .00 hrs on        0]
      [METOUT=   2    (1=imperial, 2=metric output)]
      [NSTORM=   1 ]
      [NRUN  = 0100 ]
#*****************************************************************************
#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
#*****************************************************************************
#  Project Name: [Jock River]    Project Number: [1474-16]
#  Date        : 04-03-2021
#  Modeller    : [M.M.]
#  Company     : JFSAinc.
#  License #   :  2549237
#*****************************************************************************
# CALIBRATION OF SUMMER MODEL PARAMETERS
# USING CONTINUOUS SIMULATIONS
# Rainfall data from JFSA raingauge installed at site + other gauges by the City
# Use data collected from May 1st to July 14, 2003
# 2020-11-30 change TMJSTO in COMPUTE DUALHYD (TMJSTO = 0.1 instead of 0.0001)
# 2020-12-01 correct pond curve values
# 2020-12-01 change W_CLAR_BRAZ XIMP to 0.55, SLPI=[0.5](%) (impervious slope), and LGI up to 700m
# 2021-02-19 Change the slope for ROUTE CHANNEL Station 2462 (NHYDout=["N_TO"] ,NHYDin=["SN_TO"]) from 0.033 % (as per S
# 2021-02-19 Change the slope for ROUTE CHANNEL Station 5002 (NHYDout=["N_WC"] ,NHYDin=["SN_CE"]) from 0.01 % (as per St
# ---------------------------------------------------------------------------
R0100:C00002--------------------------------------------------------------------------------------
     READ STORM
      Filename = storm.001
      Comment  = Pluie SCS de 24 hres 1:100 ans pour Ottawa CDA
      [SDT=10.00:SDUR=  24.00:PTOT=  88.57]
R0100:C00003--------------------------------------------------------------------------------------
     MODIFY STORM
      [RFACT=  1.00:TSHIFT= 960.00 min]
      [SDT=10.00:SDUR=  40.00:PTOT=  88.57]
R0100:C00004--------------------------------------------------------------------------------------
     DEFAULT VALUES
      Filename = T:\PROJ\1474-16\Design\20201026-QuantityControlAnalysis\SWMHYMO\SMR-Model\updated3\CitiGate.DEF
      ICASEdv  = 1 (read and print data)
      FileTitle= File comment: [Based onvarious calibration exercises in Onta
                 THE FOLLOWING PARAMETERS ARE USED IN THE DESIGN STANDHYD COM
      Horton's infiltration equation parameters:
      [Fo= 76.20 mm/hr] [Fc=13.20 mm/hr] [DCAY= 4.14 /hr] [F=  .00 mm]
      Parameters for PERVIOUS surfaces in STANDHYD:
      [IAper=   4.67 mm] [LGP=50.00 m] [MNP= .250]
      Parameters for IMPERVIOUS surfaces in STANDHYD:
      [IAimp=   1.57 mm] [CLI= 1.50]   [MNI= .013]
      Parameters used in NASHYD:
      [Ia=   4.67 mm] [N= 3.00]
      Average monthly Pan Evaporation data in    (mm)
   JAN   FEB   MAR   APR   MAY   JUN   JUL   AUG   SEP   OCT   NOV   DEC
   .00   .00   .00   .00   .00   .00   .00   .00   .00   .00   .00   .00
      Average monthly Potential Evapotranspiration in    (mm)
   JAN   FEB   MAR   APR   MAY   JUN   JUL   AUG   SEP   OCT   NOV   DEC
   .00   .00   .00   .00   .00   .00   .00   .00   .00   .00   .00   .00
R0100:C00005--------------------------------------------------------------------------------------
     COMPUTE API
      [APIini= 50.00: APIkdy= .8500: APIkdt= .9989]
      {APImax=119.84: APIavg= 69.19: APImin= 44.87}
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.32
R0100:C00006------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:JR_HW        3680.00   21.616 No_date   36:52   35.18 .397      .000
      [CN= 64.0: N= 3.00: Tp= 7.13]
      [IaREC= 4.00: SMIN= 57.05: SMAX=380.32: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.32
R0100:C00007------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_13         971.00    8.203 No_date   32:33   32.84 .371      .000
      [CN= 61.0: N= 3.00: Tp= 3.76]
      [IaREC= 4.00: SMIN= 64.50: SMAX=430.01: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.80
```

```
R0100:C00008------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:JR_GWM      3074.00   10.428 No_date   39:59   28.29 .319      .000
      [CN= 55.0: N= 3.00: Tp=11.33]
      [IaREC= 4.00: SMIN= 83.24: SMAX=554.96: SK= .010]
      [InterEventTime=  12.00]
R0100:C00009------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:JR_ASH      1781.00   19.695 No_date   32:38   42.49 .480      .000
      [CN= 72.0: N= 3.00: Tp= 3.91]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
R0100:C00010------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_11        500.00   10.735 No_date   29:21   36.76 .415      .000
      [CN= 66.0: N= 3.00: Tp= 1.24]
      [IaREC= 4.00: SMIN= 52.62: SMAX=350.79: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.80
R0100:C00011------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:NN_CK       1917.00   14.496 No_date   34:24   36.76 .415      .000
      [CN= 66.0: N= 3.00: Tp= 5.29]
      [IaREC= 4.00: SMIN= 52.62: SMAX=350.79: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.52
R0100:C00012------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_10       5666.00   37.663 No_date   37:48   42.49 .480      .000
      [CN= 72.0: N= 3.00: Tp= 8.00]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.75
R0100:C00013------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:KG_CK       8376.00   36.118 No_date   39:59   36.76 .415      .000
      [CN= 66.0: N= 3.00: Tp=11.66]
      [IaREC= 4.00: SMIN= 52.62: SMAX=350.79: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.68
R0100:C00014------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_9        1132.00   16.501 No_date   30:52   40.82 .461      .000
      [CN= 70.0: N= 3.00: Tp= 2.51]
      [IaREC= 4.00: SMIN= 43.07: SMAX=287.10: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.82
R0100:C00015------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:NC_CK       4464.00   18.060 No_date   39:59   33.61 .380      .000
      [CN= 62.0: N= 3.00: Tp=11.32]
      [IaREC= 4.00: SMIN= 61.90: SMAX=412.66: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.80
R0100:C00016------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_8         131.00    3.259 No_date   28:57   34.39 .388      .000
      [CN= 63.0: N= 3.00: Tp=  .90]
      [IaREC= 4.00: SMIN= 59.42: SMAX=396.11: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.65
R0100:C00017------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:HB_DR       3854.00   21.238 No_date   38:28   36.76 .415      .000
      [CN= 66.0: N= 3.00: Tp= 8.42]
      [IaREC= 4.00: SMIN= 52.62: SMAX=350.79: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.82
R0100:C00018------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_7        3197.00   16.421 No_date   36:21   29.79 .336      .000
      [CN= 57.0: N= 3.00: Tp= 6.65]
      [IaREC= 4.00: SMIN= 76.32: SMAX=508.81: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.75
R0100:C00019------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_6         165.00    1.511 No_date   33:01   37.57 .424      .000
      [CN= 67.0: N= 3.00: Tp= 4.18]
      [IaREC= 4.00: SMIN= 50.55: SMAX=336.97: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.67
R0100:C00020------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:VG_DR       1332.00   10.882 No_date   35:10   42.49 .480      .000
      [CN= 72.0: N= 3.00: Tp= 5.95]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
R0100:C00021------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_5         224.00    9.576 No_date   28:44   47.62 .538      .000
      [CN= 77.0: N= 3.00: Tp=  .75]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.20
R0100:C00022------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:FL_CK       4945.00   52.056 No_date   33:16   44.17 .499      .000
      [CN= 74.0: N= 3.00: Tp= 4.45]
      [IaREC= 4.00: SMIN= 36.67: SMAX=244.49: SK= .010]
      [InterEventTime=  12.00]
R0100:C00023------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_5A2        20.00    1.097 No_date   28:35   52.06 .588      .000
      [CN= 81.0: N= 3.00: Tp=  .62]
      [IaREC= 4.00: SMIN= 25.21: SMAX=168.09: SK= .010]
      [InterEventTime=  12.00]
#
# The Tp was modified according to a Peak Reduction factor (MTO-Chart B2-4)
# of 1.61
R0100:C00024------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_5A1      1412.00   10.184 No_date   37:44   45.88 .518      .000
      [CN= 75.0: N= 3.00: Tp= 8.00]
      [IaREC= 4.00: SMIN= 33.81: SMAX=225.43: SK= .010]
      [InterEventTime=  12.00]
R0100:C00025------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_4         585.00   14.953 No_date   29:55   52.06 .588      .000
      [CN= 81.0: N= 3.00: Tp= 1.75]
      [IaREC= 4.00: SMIN= 25.21: SMAX=168.09: SK= .010]
      [InterEventTime=  12.00]
R0100:C00026------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:LM_CK       1021.00   19.782 No_date   30:45   51.16 .578      .000
      [CN= 80.0: N= 3.00: Tp= 2.46]
      [IaREC= 4.00: SMIN= 26.32: SMAX=175.50: SK= .010]
      [InterEventTime=  12.00]
R0100:C00027------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_2         177.00    7.567 No_date   28:44   47.62 .538      .000
      [CN= 77.0: N= 3.00: Tp=  .75]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0100:C00028------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SM_DR       1122.00   17.981 No_date   31:42   52.06 .588      .000
      [CN= 81.0: N= 3.00: Tp= 3.25]
      [IaREC= 4.00: SMIN= 25.21: SMAX=168.09: SK= .010]
      [InterEventTime=  12.00]
R0100:C00029------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:MO_DR       2737.00   40.730 No_date   31:28   46.75 .528      .000
      [CN= 76.0: N= 3.00: Tp= 3.03]
      [IaREC= 4.00: SMIN= 32.46: SMAX=216.39: SK= .010]
      [InterEventTime=  12.00]
#
# Routing hydrographs
#
# Starting with the addition of Jock River Headwater and Subwatershed 13
#
R0100:C00030------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:JR_HW       3680.00   21.616 No_date   36:52   35.18  n/a      .000
                    +     1.0 02:SW_13        971.00    8.203 No_date   32:33   32.84  n/a      .000
                 SUM=     1.0 01:S_N13       4651.00   27.660 No_date   35:21   34.69  n/a      .000
#
# Sum of hydrographs from Node 13 routed to Node 13A
# (Approximated cross-section - see cross-section 258)
# Use n=0.04 for summer conditions and n=0.025 for spring conditions
#
R0100:C00031------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N13       4651.00   27.660 No_date   35:21   34.69  n/a      .000
     [RDT= 1.00] out<-    1.0 01:N13A        4651.00   22.598 No_date   38:56   34.69  n/a      .000
      [L/S/n= 9074./ .022/.040]
      {Vmax=  .598:Dmax= 4.178}
#
# Addition of Subwatershed Jock River at Goodwood Marsh to Node 13A
#
R0100:C00032------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N13A        4651.00   22.598 No_date   38:56   34.69  n/a      .000
                    +     1.0 02:JR_GWM      3074.00   10.428 No_date   39:59   28.29  n/a      .000
                 SUM=     1.0 01:SN13A       7725.00   32.845 No_date   39:44   32.14  n/a      .000
#
# Insertion of a reservoir to simulate the effects of the Goodwood Marsh
#
R0100:C00033------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:SN13A       7725.00   32.845 No_date   39:44   32.14  n/a      .000
                 out <=   1.0 01:RES_GM      7725.00    3.950 No_date   62:26   32.14  n/a      .000
     {MxStoUsed=.1796E+03  m3}
#
R0100:C00034------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:RES_GM      7725.00    3.950 No_date   62:26   32.14  n/a      .000
      fname :H_RESGM
      remark:Outflow from Res GM
# Output of Reservoir Goodwood Marsh routed from Node 13A to Node 12
# (Approximated cross-section - see cross-section 258)
# Use n=0.04 for summer conditions and n=0.025 for spring conditions
R0100:C00035------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:RES_GM      7725.00    3.950 No_date   62:26   32.14  n/a      .000
     [RDT= 1.00] out<-    1.0 01:N12         7725.00    3.947 No_date   64:43   32.14  n/a      .000
      [L/S/n= 5926./ .076/.040]
      {Vmax=  .560:Dmax= 1.560}
#
# Addition of Subwatershed Jock River at Ashton to Node 12
#
R0100:C00036------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N12         7725.00    3.947 No_date   64:43   32.14  n/a      .000
                    +     1.0 02:JR_ASH      1781.00   19.695 No_date   32:38   42.49  n/a      .000
                 SUM=     1.0 01:S_N12       9506.00   21.745 No_date   32:41   34.08  n/a      .000
R0100:C00037------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:S_N12       9506.00   21.745 No_date   32:41   34.08  n/a      .000
      fname :H_SN12
      remark:flow at S_N12 near Ashton
#
# Sum of hydrographs from Node 12 routed to Node 11
# (Approximated cross-section - see cross-section 258)
# Use n=0.04 for summer conditions and n=0.025 for spring conditions
#
# Sum of hydrographs from Node 12 routed to Node 11 with Dummy section 248
#
R0100:C00038------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N12       9506.00   21.745 No_date   32:41   34.08  n/a      .000
     [RDT= 1.00] out<-    1.0 01:Dum11       9506.00   21.522 No_date   32:57   34.08  n/a      .000
      [L/S/n=  972./ .054/.040]
      {Vmax=  .777:Dmax= 3.194}
#
# Addition of Subwatershed 11 and No Name Creek to Node 11
#
R0100:C00039------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:Dum11       9506.00   21.522 No_date   32:57   34.08  n/a      .000
                    +     1.0 02:SW_11        500.00   10.735 No_date   29:21   36.76  n/a      .000
                    +     1.0 02:NN_CK       1917.00   14.496 No_date   34:24   36.76  n/a      .000
                 SUM=     1.0 01:S_N11      11923.00   38.138 No_date   32:59   34.62  n/a      .000
#
# Sum of hydrographs from Node 11 routed to Node 10
# Section 1
#
R0100:C00040------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N11      11923.00   38.138 No_date   32:59   34.62  n/a      .000
     [RDT= 1.00] out<-    1.0 01:N10        11923.00   23.609 No_date   39:19   34.62  n/a      .000
      [L/S/n=14028./ .157/.040]
      {Vmax=  .486:Dmax= 1.492}
#
# Addition of Subwatershed 10 to Node 10
#
R0100:C00041------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N10        11923.00   23.609 No_date   39:19   34.62  n/a      .000
                    +     1.0 02:SW_10       5666.00   37.663 No_date   37:48   42.49  n/a      .000
                 SUM=     1.0 01:S_N10      17589.00   61.058 No_date   38:16   37.16  n/a      .000
R0100:C00042------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:S_N10      17589.00   61.058 No_date   38:16   37.16  n/a      .000
      fname :H_SN10
      remark:flow at S_N10: N10 + SW_10
# Addition of Kings Creek to S_N10
#
R0100:C00043------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:S_N10      17589.00   61.058 No_date   38:16   37.16  n/a      .000
                    +     1.0 02:KG_CK       8376.00   36.118 No_date   39:59   36.76  n/a      .000
                 SUM=     1.0 01:S_N10A     25965.00   96.054 No_date   39:40   37.03  n/a      .000
#
# Sum of hydrographs from Node 10 routed to Node 9
# Section 2
#
R0100:C00044------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N10A     25965.00   96.054 No_date   39:40   37.03  n/a      .000
     [RDT= 1.00] out<-    1.0 01:N9         25965.00   94.262 No_date   39:59   37.03  n/a      .000
      [L/S/n= 3982./ .075/.040]
      {Vmax=  .775:Dmax= 2.151}
#
# Addition of Subwatershed 9 and Nichols Creek to Node 9
#
R0100:C00045------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N9         25965.00   94.262 No_date   39:59   37.03  n/a      .000
                    +     1.0 02:SW_9        1132.00   16.501 No_date   30:52   40.83  n/a      .000
                    +     1.0 02:NC_CK       4464.00   18.060 No_date   39:59   33.61  n/a      .000
                 SUM=     1.0 01:S_N9       31561.00  115.681 No_date   39:59   36.68  n/a      .000
#
# Sum of hydrographs from Node 9 routed to Node 8
# Section 3
#
R0100:C00046------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N9       31561.00  115.681 No_date   39:59   36.68  n/a      .000
     [RDT= 1.00] out<-    1.0 01:N8         31561.00  109.395 No_date   39:59   36.68  n/a      .000
      [L/S/n= 2269./ .088/.045]
      {Vmax=  .374:Dmax= 1.924}
#
# Addition of Subwatershed 8 and Hobb's Drain to Node 8
#
R0100:C00047------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N8         31561.00  109.395 No_date   39:59   36.68  n/a      .000
                    +     1.0 02:SW_8         131.00    3.259 No_date   28:57   34.39  n/a      .000
                    +     1.0 02:HB_DR       3854.00   21.238 No_date   38:28   36.76  n/a      .000
                 SUM=     1.0 01:S_N8       35546.00  130.593 No_date   39:59   36.68  n/a      .000
#
# Sum of hydrographs from Node 8 routed to Node 7
# Section 4
#
R0100:C00048------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N8       35546.00  130.593 No_date   39:59   36.68  n/a      .000
     [RDT= 1.00] out<-    1.0 01:N7         35546.00  111.942 No_date   44:52   36.68  n/a      .000
      [L/S/n= 3750./ .053/.070]
      {Vmax=  .237:Dmax= 2.412}
#
# Addition of Subwatershed 7 to Node 7
#
R0100:C00049------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N7         35546.00  111.942 No_date   44:52   36.68  n/a      .000
                    +     1.0 02:SW_7        3197.00   16.421 No_date   36:21   29.79  n/a      .000
                 SUM=     1.0 01:S_N7       38743.00  120.740 No_date   43:36   36.11  n/a      .000
R0100:C00050------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:S_N7       38743.00  120.740 No_date   43:36   36.11  n/a      .000
      fname :H_SN7
      remark:flow at S_N7: N7 + SW_7
# Insertion of a reservoir to simulate the effects of the Richmond Fen.
# Storage area and volumes were estimated from available topo maps.
# Release rate from fen was assumed to be controlled by the downstream
# river cross-section for summer conditions.  It is was assumed that for up to
# 0.75 m of water, the main channel of the river provided the storage.  Above
# this depth, the wetland starts to signigicantly store water.
#
R0100:C00051------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:S_N7       38743.00  120.740 No_date   43:36   36.11  n/a      .000
                 out <=   1.0 01:RES_RF     38743.00   62.351 No_date   58:25   36.11  n/a      .000
     {MxStoUsed=.5140E+03  m3}
R0100:C00052------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:RES_RF     38743.00   62.351 No_date   58:25   36.11  n/a      .000
      fname :H_ResRF
      remark:outflow of Richmond Fen
#
# Sum of hydrographs from Node 7 routed to Node 6
# Section 5
#
R0100:C00053------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:RES_RF     38743.00   62.351 No_date   58:25   36.11  n/a      .000
     [RDT= 1.00] out<-    1.0 01:N6         38743.00   62.067 No_date   59:46   36.11  n/a      .000
      [L/S/n= 3056./ .082/.025]
      {Vmax=  .556:Dmax= 1.373}
#
# Addition of Subwatershed 6 and Van Gaal Drain to Node 6
#
R0100:C00054------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N6         38743.00   62.067 No_date   59:46   36.11  n/a      .000
                    +     1.0 02:SW_6         165.00    1.511 No_date   33:01   37.57  n/a      .000
                    +     1.0 02:VG_DR       1332.00   10.882 No_date   35:10   42.49  n/a      .000
                 SUM=     1.0 01:S_N6       40240.01   62.114 No_date   59:39   36.33  n/a      .000
#
# Sum of hydrographs from Node 6 routed to Node 5
# Section 6
#
R0100:C00055------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N6       40240.01   62.114 No_date   59:39   36.33  n/a      .000
     [RDT= 1.00] out<-    1.0 01:N5         40240.01   61.991 No_date   60:21   36.33  n/a      .000
      [L/S/n= 1852./ .054/.035]
      {Vmax=  .494:Dmax= 1.468}
#
# Addition of Subwatershed 5 and Flowing Creek to Node 5
#
R0100:C00056------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N5         40240.01   61.991 No_date   60:21   36.33  n/a      .000
                    +     1.0 02:SW_5         224.00    9.576 No_date   28:44   47.62  n/a      .000
                    +     1.0 02:FL_CK       4945.00   52.056 No_date   33:16   44.17  n/a      .000
                 SUM=     1.0 01:S_N5       45409.01   80.898 No_date   34:11   37.24  n/a      .000
#
# Sum of hydrographs from Node 5 routed to Node 5A
# Section 7
#
R0100:C00057------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N5       45409.01   80.898 No_date   34:11   37.24  n/a      .000
     [RDT= 1.00] out<-    1.0 01:N5A        45409.01   80.666 No_date   34:28   37.24  n/a      .000
      [L/S/n=  556./ .090/.040]
      {Vmax=  .546:Dmax= 1.353}
#
# Addition of Subwatershed 5A1 and Subwatershed 5A2 to Node 5A
#
R0100:C00058------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N5A        45409.01   80.666 No_date   34:28   37.24  n/a      .000
                    +     1.0 02:SW_5A2        20.00    1.097 No_date   28:35   52.06  n/a      .000
                    +     1.0 02:SW_5A1      1412.00   10.184 No_date   37:44   45.88  n/a      .000
                 SUM=     1.0 01:S_N5A      46841.01   89.756 No_date   34:38   37.51  n/a      .000
#
# Sum of hydrographs from Node 5A routed to Node 4
# Section 8
#
R0100:C00059------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
```

```
    ROUTE CHANNEL   ->    1.0 02:S_N5A      46841.01   89.756 No_date   34:38   37.51  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N4         46841.01   85.943 No_date   36:10   37.51  n/a     .000
      [L/S/n= 4630./ .043/.035]
      {Vmax=  .904:Dmax= 3.866}
#
# Addition of Subwatershed 4 and Leamy Creek to Node 4
#
R0100:C00060------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N4         46841.01   85.943 No_date   36:10   37.51  n/a     .000
                    +     1.0 02:SW_4         585.00   14.953 No_date   29:55   52.06  n/a     .000
                    +     1.0 02:LM_CK       1021.00   19.782 No_date   30:45   51.16  n/a     .000
                 SUM=     1.0 01:S_N4       48447.00   96.618 No_date   35:12   37.97  n/a     .000
R0100:C00061------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:S_N4       48447.00   96.618 No_date   35:12   37.97  n/a     .000
      fname :S_N4.0100
      remark:flow at S_N4
#
# Sum of hydrographs from Node 4 routed to Node 2
# Section 9
#
R0100:C00062------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N4       48447.00   96.618 No_date   35:12   37.97  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N2         48447.00   96.322 No_date   35:13   37.97  n/a     .000
      [L/S/n= 1667./ .060/.040]
      {Vmax=  .944:Dmax= 3.929}
#
# Addition of Subwatershed 2 with Monohan Drain and Smith Drain to Node 2
#
R0100:C00063------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N2         48447.00   96.322 No_date   35:13   37.97  n/a     .000
                    +     1.0 02:SW_2         177.00    7.567 No_date   28:44   47.62  n/a     .000
                    +     1.0 02:SM_DR       1122.00   17.981 No_date   31:42   52.06  n/a     .000
                    +     1.0 02:MO_DR       2737.00   40.730 No_date   31:28   46.75  n/a     .000
                 SUM=     1.0 01:S_N2       52483.00  143.580 No_date   32:59   38.76  n/a     .000
R0100:C00064------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:S_N2       52483.00  143.580 No_date   32:59   38.76  n/a     .000
      fname :H_SN2
      remark:flow at S_N2 Jock River Gauge at Moodie Dr.
#
# Sum of hydrographs from Node 2 routed to Node 1
# Section 10
#
#******************************************************************************
#
# Hydrograph from Node 2 routed to Node 416
# Channel X-Section obtained from RVCA Hydraulic Model - Station 9025
#
R0100:C00065------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:S_N2       52483.00  143.580 No_date   32:59   38.76  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N_416      52483.00  139.298 No_date   33:45   38.76  n/a     .000
      [L/S/n= 2327./ .050/.055]
      {Vmax=  .801:Dmax= 3.814}
#******************************************************************************
#    Catchment SW-1a
#    - Portion of RVCA catchment SW_1 outside of Reach 1 subwatershed
#    - Undeveloped agricultural land
#******************************************************************************
R0100:C00066------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:SW_1a        536.42    7.274 No_date   31:14   40.95 .462     .000
      [CN= 72.0: N= 3.00: Tp= 2.79]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
R0100:C00067------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-Okeefe    44.93    7.977 No_date   28:02   70.58 .797     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .75:LGI= 547.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0100:C00068------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:S-1-Okeefe    44.93    7.977 No_date   28:02   70.58  n/a     .000
     Major System   /     1.0 02:S-1-OkMJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:S-1-OkMN      44.93    4.591 No_date   27:52   70.65  n/a     .000
      {MjSysSto=.2254E+04, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00069------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:S-1-OkMJ        .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:S-1-OkMN      44.93    4.591 No_date   27:52   70.65  n/a     .000
                 SUM=     1.0 01:S-1-OkS       44.93    4.591 No_date   27:52   70.65  n/a     .000
R0100:C00070------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:S-1-OkS       44.93    4.591 No_date   27:52   70.65  n/a     .000
                out <=    1.0 01:S-1-OkSR      43.17     .537 No_date   28:35   70.65  n/a     .000
           overflow <=    1.0 03:S-1-OkSovf     1.76    1.172 No_date   28:35   70.65  n/a     .000
     {MxStoUsed=.1792E+01  m3, TotOvfVol=.1240E+00  m3, N-Ovf=    2, TotDurOvf=    1.hrs}
R0100:C00071------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N_416      52483.00  139.298 No_date   33:45   38.76  n/a     .000
                    +     1.0 02:SW_1a        536.42    7.274 No_date   31:14   40.95  n/a     .000
                    +     1.0 02:S-1-OkSR      43.17     .537 No_date   28:35   70.65  n/a     .000
                    +     1.0 02:S-1-OkSovf     1.76    1.172 No_date   28:35   70.65  n/a     .000
                 SUM=     1.0 01:SN_416     53064.36  145.245 No_date   33:31   38.81  n/a     .000
R0100:C00072------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_416     53064.36  145.245 No_date   33:31   38.81  n/a     .000
      fname :SN_416.0100
      remark:Total Flows at Highway 416 before Station 7245
#
# Hydrograph from Node 416 routed to Node at Okeefe drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 7245
#
R0100:C00073------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_416     53064.36  145.245 No_date   33:31   38.81  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N_OK       53064.36  145.101 No_date   33:45   38.81  n/a     .000
      [L/S/n=  497./ .302/.055]
      {Vmax= 1.729:Dmax= 3.269}
#******************************************************************************
#    Catchment OKEEFE
#    - To O'Keefe drain (north of the Jock)
#    - Developed with assumed 43% imp.
#    - 2020-12-01 add Okeefe model (Area 513.02 HA) instead of current Okeefe (Area 513.02 HA)
#    - 2020-11-20 Okeefe detailed model was added as per the NOVATECH SWMHYMO model (Citi-Gate 2014).
#******************************************************************************
R0100:C00074------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:O-1           63.72    1.380 No_date   28:58   30.74 .347     .000
      [CN= 61.0: N= 3.00: Tp=  .90]
      [IaREC= 4.00: SMIN= 64.50: SMAX=430.01: SK= .010]
      [InterEventTime=  12.00]
R0100:C00075------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:O-1           63.72    1.380 No_date   28:58   30.74  n/a     .000
     [RDT= 1.00] out<-    1.0 01:O-1R          63.72    1.307 No_date   29:13   30.74  n/a     .000
      [L/S/n=  960./ .630/.043]
      {Vmax=  .926:Dmax=  .493}
R0100:C00076------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:O-2           28.61     .485 No_date   29:13   28.38 .320     .000
      [CN= 57.0: N= 3.00: Tp= 1.10]
      [IaREC= 4.00: SMIN= 76.32: SMAX=508.81: SK= .010]
      [InterEventTime=  12.00]
R0100:C00077------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:O-4           46.94     .650 No_date   28:59   21.79 .246     .000
      [CN= 49.0: N= 3.00: Tp=  .90]
      [IaREC= 4.00: SMIN=104.59: SMAX=697.25: SK= .010]
      [InterEventTime=  12.00]
R0100:C00078------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:O-1R          63.72    1.307 No_date   29:13   30.74  n/a     .000
                    +     1.0 02:O-2           28.61     .485 No_date   29:13   28.38  n/a     .000
                    +     1.0 02:O-4           46.94     .650 No_date   28:59   21.79  n/a     .000
                 SUM=     1.0 01:OKF-N        139.27    2.427 No_date   29:10   27.24  n/a     .000
R0100:C00079------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:OKF-N        139.27    2.427 No_date   29:10   27.24  n/a     .000
     [RDT= 1.00] out<-    1.0 01:OKF-NR       139.27    2.423 No_date   29:12   27.24  n/a     .000
      [L/S/n=  210./ .810/.043]
      {Vmax= 1.130:Dmax=  .796}
R0100:C00080------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:O-6           16.46     .220 No_date   28:45   18.67 .211     .000
      [CN= 43.0: N= 3.00: Tp=  .70]
      [IaREC= 4.00: SMIN=134.47: SMAX=896.47: SK= .010]
      [InterEventTime=  12.00]
R0100:C00081------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:O-3           39.67    1.454 No_date   28:21   32.90 .371     .000
      [XIMP=.15:TIMP=.30]
      [LOSS= 2 :CN= 50.0]
      [Pervious     area: IAper= 4.67:SLPP= .32:LGP= 440.:MNP=.035:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .32:LGI=1880.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 99.77: SMAX=665.12: SK= .010]
R0100:C00082------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:O-5           60.63    3.669 No_date   28:10   38.00 .429     .000
      [XIMP=.13:TIMP=.26]
      [LOSS= 2 :CN= 61.0]
      [Pervious     area: IAper= 4.67:SLPP=1.38:LGP= 550.:MNP=.035:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.38:LGI=1450.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 64.50: SMAX=430.01: SK= .010]
R0100:C00083------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:OKF-NR       139.27    2.423 No_date   29:12   27.24  n/a     .000
                    +     1.0 02:O-3           39.67    1.454 No_date   28:21   32.90  n/a     .000
                    +     1.0 02:O-5           60.63    3.669 No_date   28:10   38.00  n/a     .000
                    +     1.0 02:O-6           16.46     .220 No_date   28:45   18.67  n/a     .000
                 SUM=     1.0 01:PT1          256.03    5.938 No_date   28:19   30.11  n/a     .000
R0100:C00084------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:O-7            5.28     .117 No_date   28:37   25.16 .284     .000
      [CN= 54.0: N= 3.00: Tp=  .60]
      [IaREC= 4.00: SMIN= 87.01: SMAX=580.07: SK= .010]
      [InterEventTime=  12.00]
R0100:C00085------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:PT1          256.03    5.938 No_date   28:19   30.11  n/a     .000
                    +     1.0 02:O-7            5.28     .117 No_date   28:37   25.16  n/a     .000
                 SUM=     1.0 01:FF           261.31    6.036 No_date   28:19   30.01  n/a     .000
R0100:C00086------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:FF           261.31    6.036 No_date   28:19   30.01  n/a     .000
     [RDT= 1.00] out<-    1.0 01:DRAIN1       261.31    5.843 No_date   28:23   30.01  n/a     .000
      [L/S/n=  302./1.000/.043]
      {Vmax=  .853:Dmax=  .797}
R0100:C00087------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:D1             1.17     .110 No_date   28:12   50.22 .567     .000
      [CN= 84.0: N= 3.00: Tp=  .28]
      [IaREC= 4.00: SMIN= 21.09: SMAX=140.62: SK= .010]
      [InterEventTime=  12.00]
R0100:C00088------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A1             2.50     .572 No_date   28:01   70.42 .795     .000
      [XIMP=.68:TIMP=.85]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 224.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00089------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:A1             2.50     .572 No_date   28:01   70.42  n/a     .000
                out <=    1.0 01:A1-STR         2.50     .173 No_date   28:17   70.42  n/a     .000
           overflow <=    1.0 03:A1-OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.7765E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00090------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:ST-2            .59     .115 No_date   28:00   55.78 .630     .000
      [XIMP=.46:TIMP=.57]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 109.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00091------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:ST-2            .59     .115 No_date   28:00   55.78  n/a     .000
                out <=    1.0 01:ST2STR          .59     .053 No_date   28:13   55.78  n/a     .000
           overflow <=    1.0 03:ST2OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.5215E-02  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00092------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:O-8           60.55    1.639 No_date   29:04   38.99 .440     .000
      [CN= 69.0: N= 3.00: Tp= 1.00]
      [IaREC= 4.00: SMIN= 44.82: SMAX=298.82: SK= .010]
      [InterEventTime=  12.00]
R0100:C00093------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:O-8           60.55    1.639 No_date   29:04   38.99  n/a     .000
     [RDT= 1.00] out<-    1.0 01:O8PIPE        60.55    1.631 No_date   29:07   38.99  n/a     .000
      [L/S/n=  335./ .100/.013]
      {Vmax= 1.305:Dmax=  .697}
      {HGTH= 1.20:WDTH= 1.80}
R0100:C00094------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:DRAIN1       261.31    5.843 No_date   28:23   30.01  n/a     .000
                    +     1.0 02:D1             1.17     .110 No_date   28:12   50.22  n/a     .000
                    +     1.0 02:A1-STR         2.50     .173 No_date   28:17   70.42  n/a     .000
                    +     1.0 02:A1-OVF          .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:ST2STR          .59     .053 No_date   28:13   55.78  n/a     .000
                    +     1.0 02:ST2OVF          .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:O8PIPE        60.55    1.631 No_date   29:07   38.99  n/a     .000
                 SUM=     1.0 01:ST2-IN       326.12    7.203 No_date   28:33   32.11  n/a     .000
R0100:C00095------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A7             3.51     .784 No_date   28:01   70.42 .795     .000
      [XIMP=.68:TIMP=.85]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 265.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00096------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:A7             3.51     .784 No_date   28:01   70.42  n/a     .000
                out <=    1.0 01:A7-STR         3.51     .240 No_date   28:18   70.42  n/a     .000
           overflow <=    1.0 03:A7-OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.1088E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00097------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:ST-3            .71     .138 No_date   28:00   55.78 .630     .000
      [XIMP=.46:TIMP=.57]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 119.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00098------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:ST-3            .71     .138 No_date   28:00   55.78  n/a     .000
                out <=    1.0 01:ST3STR          .71     .064 No_date   28:13   55.78  n/a     .000
           overflow <=    1.0 03:ST3OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.6043E-02  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00099------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:ST2-IN       326.12    7.203 No_date   28:33   32.11  n/a     .000
                    +     1.0 02:A7-STR         3.51     .240 No_date   28:18   70.42  n/a     .000
                    +     1.0 02:A7-OVF          .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:ST3STR          .71     .064 No_date   28:13   55.78  n/a     .000
                    +     1.0 02:ST3OVF          .00     .000 No_date    0:00     .00  n/a     .000
                 SUM=     1.0 01:PT2ST3       330.34    7.487 No_date   28:31   32.57  n/a     .000
R0100:C00100------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:PT2ST3       330.34    7.487 No_date   28:31   32.57  n/a     .000
     [RDT= 1.00] out<-    1.0 01:DRAIN2       330.34    6.868 No_date   28:55   32.57  n/a     .000
      [L/S/n=  592./ .230/.043]
      {Vmax=  .611:Dmax= 1.215}
R0100:C00101------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:D2             2.28     .087 No_date   29:02   50.22 .567     .000
      [CN= 84.0: N= 3.00: Tp=  .99]
      [IaREC= 4.00: SMIN= 21.09: SMAX=140.62: SK= .010]
      [InterEventTime=  12.00]
R0100:C00102------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A17           12.04    2.382 No_date   28:03   70.42 .795     .000
      [XIMP=.68:TIMP=.85]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 491.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00103------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:A17           12.04    2.382 No_date   28:03   70.42  n/a     .000
                out <=    1.0 01:A17STR        12.04     .801 No_date   28:24   70.42  n/a     .000
           overflow <=    1.0 03:A17OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.3671E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00104------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:ST-4            .35     .069 No_date   28:00   55.78 .630     .000
      [XIMP=.46:TIMP=.57]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=  84.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00105------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:ST-4            .35     .069 No_date   28:00   55.78  n/a     .000
                out <=    1.0 01:ST4STR          .35     .032 No_date   28:13   55.78  n/a     .000
           overflow <=    1.0 03:ST4OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.3372E-02  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00106------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A18            5.30    1.139 No_date   28:01   70.42 .795     .000
      [XIMP=.68:TIMP=.85]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 326.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00107------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:A18            5.30    1.139 No_date   28:01   70.42  n/a     .000
                out <=    1.0 01:A18STR         5.30     .360 No_date   28:20   70.42  n/a     .000
           overflow <=    1.0 03:A18OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.1636E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00108------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:DRAIN2       330.34    6.868 No_date   28:55   32.57  n/a     .000
                    +     1.0 02:D2             2.28     .087 No_date   29:02   50.22  n/a     .000
                    +     1.0 02:A17STR        12.04     .801 No_date   28:24   70.42  n/a     .000
                    +     1.0 02:A17OVF          .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:ST4STR          .35     .032 No_date   28:13   55.78  n/a     .000
                    +     1.0 02:ST4OVF          .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:A18STR         5.30     .360 No_date   28:20   70.42  n/a     .000
                    +     1.0 02:A18OVF          .00     .000 No_date    0:00     .00  n/a     .000
                 SUM=     1.0 01:PT3ST4       350.31    7.785 No_date   28:52   34.58  n/a     .000
R0100:C00109------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:PT3ST4       350.31    7.785 No_date   28:52   34.58  n/a     .000
     [RDT= 1.00] out<-    1.0 01:DRAIN3       350.31    7.474 No_date   29:08   34.58  n/a     .000
      [L/S/n=  525./ .230/.043]
      {Vmax=  .628:Dmax= 1.257}
R0100:C00110------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:D3             2.51     .132 No_date   28:43   54.04 .610     .000
      [CN= 86.0: N= 3.00: Tp=  .73]
      [IaREC= 4.00: SMIN= 17.43: SMAX=116.21: SK= .010]
      [InterEventTime=  12.00]
R0100:C00111------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:C1             3.41     .763 No_date   28:01   70.42 .795     .000
      [XIMP=.68:TIMP=.85]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 261.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00112------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:C1             3.41     .763 No_date   28:01   70.42  n/a     .000
                out <=    1.0 01:C1-STR         3.41     .232 No_date   28:18   70.42  n/a     .000
           overflow <=    1.0 03:C1-OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.1056E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00113------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:ST-5            .45     .088 No_date   28:00   55.78 .630     .000
      [XIMP=.46:TIMP=.57]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=  95.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00114------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:ST-5            .45     .088 No_date   28:00   55.78  n/a     .000
                out <=    1.0 01:ST5STR          .45     .041 No_date   28:13   55.78  n/a     .000
           overflow <=    1.0 03:ST5OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.4111E-02  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00115------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:DRAIN3       350.31    7.474 No_date   29:08   34.58  n/a     .000
                    +     1.0 02:D3             2.51     .132 No_date   28:43   54.04  n/a     .000
                    +     1.0 02:C1-STR         3.41     .232 No_date   28:18   70.42  n/a     .000
                    +     1.0 02:C1-OVF          .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:ST5STR          .45     .041 No_date   28:13   55.78  n/a     .000
                    +     1.0 02:ST5OVF          .00     .000 No_date    0:00     .00  n/a     .000
                 SUM=     1.0 01:ST5-E        356.68    7.731 No_date   29:07   35.08  n/a     .000
R0100:C00116------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:STRAND         7.59    1.163 No_date   28:08   68.85 .777     .000
      [XIMP=.64:TIMP=.85]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI=1230.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00117------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:STRAND         7.59    1.163 No_date   28:08   68.85  n/a     .000
                out <=    1.0 01:S-POND         7.59     .200 No_date   29:01   68.85  n/a     .000
           overflow <=    1.0 03:S-OVF           .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.3382E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00118------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:ST5-E        356.68    7.731 No_date   29:07   35.08  n/a     .000
                    +     1.0 02:S-POND         7.59     .200 No_date   29:01   68.85  n/a     .000
```

```
                    +     1.0 02:S-OVF            .00      .000 No_date    0:00      .00  n/a      .000
                 SUM=     1.0 01:SSAOUT        364.27     7.924 No_date   29:06    35.79  n/a      .000
R0100:C00119------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SSAOUT        364.27     7.924 No_date   29:06    35.79  n/a      .000
      fname :SSAOUT.0100
      remark:SSAOUT
R0100:C00120------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:Area-A         66.75     9.945 No_date   28:08    67.64 .764      .000
      [XIMP=.64:TIMP=.80]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious    area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious  area: IAimp= 1.57:SLPI= .50:LGI=1155.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00121------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:Area-A         66.75     9.945 No_date   28:08    67.64  n/a      .000
      fname :Area-A.0100
      remark:SMWF-A Inflow
R0100:C00122------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:Area-A         66.75     9.945 No_date   28:08    67.64  n/a      .000
                out <=    1.0 01:SWMF-A         66.75     1.357 No_date   29:10    67.64  n/a      .000
           overflow <=    1.0 03:SWMAOV           .00      .000 No_date    0:00      .00  n/a      .000
     {MxStoUsed=.3051E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00123------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SWMF-A         66.75     1.357 No_date   29:10    67.64  n/a      .000
      fname :SWMF-A.0100
      remark:SMWF-A Outflow
R0100:C00124------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:SSAOUT        364.27     7.924 No_date   29:06    35.79  n/a      .000
                    +     1.0 02:SWMF-A         66.75     1.357 No_date   29:10    67.64  n/a      .000
                    +     1.0 02:SWMAOV           .00      .000 No_date    0:00      .00  n/a      .000
                 SUM=     1.0 01:PT4ST5        431.02     9.279 No_date   29:07    40.72  n/a      .000
R0100:C00125------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:C6              1.87      .433 No_date   28:01    70.42 .795      .000
      [XIMP=.68:TIMP=.85]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious    area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious  area: IAimp= 1.57:SLPI= .50:LGI= 193.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00126------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:C6              1.87      .433 No_date   28:01    70.42  n/a      .000
                out <=    1.0 01:C6-STR          1.87      .129 No_date   28:16    70.42  n/a      .000
           overflow <=    1.0 03:C6-OVF           .00      .000 No_date    0:00      .00  n/a      .000
     {MxStoUsed=.5845E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00127------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:C7              1.62      .381 No_date   28:00    70.42 .795      .000
      [XIMP=.68:TIMP=.85]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious    area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious  area: IAimp= 1.57:SLPI= .50:LGI= 180.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00128------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:C7              1.62      .381 No_date   28:00    70.42  n/a      .000
                out <=    1.0 01:C7-STR          1.62      .112 No_date   28:16    70.42  n/a      .000
           overflow <=    1.0 03:C7-OVF           .00      .000 No_date    0:00      .00  n/a      .000
     {MxStoUsed=.5036E-01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00129------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:ST-6             .41      .081 No_date   28:00    55.78 .630      .000
      [XIMP=.46:TIMP=.57]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious    area: IAper= 4.67:SLPP= .50:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious  area: IAimp= 1.57:SLPI= .50:LGI=  91.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00130------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:ST-6             .41      .081 No_date   28:00    55.78  n/a      .000
                out <=    1.0 01:ST6STR           .41      .037 No_date   28:13    55.78  n/a      .000
           overflow <=    1.0 03:ST6OVF           .00      .000 No_date    0:00      .00  n/a      .000
     {MxStoUsed=.3877E-02  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00131------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:PT4ST5        431.02     9.279 No_date   29:07    40.72  n/a      .000
                    +     1.0 02:C6-STR          1.87      .129 No_date   28:16    70.42  n/a      .000
                    +     1.0 02:C6-OVF           .00      .000 No_date    0:00      .00  n/a      .000
                    +     1.0 02:C7-STR          1.62      .112 No_date   28:16    70.42  n/a      .000
                    +     1.0 02:C7-OVF           .00      .000 No_date    0:00      .00  n/a      .000
                    +     1.0 02:ST6STR           .41      .037 No_date   28:13    55.78  n/a      .000
                    +     1.0 02:ST6OVF           .00      .000 No_date    0:00      .00  n/a      .000
                 SUM=     1.0 01:PT5ST6        434.92     9.426 No_date   29:06    40.97  n/a      .000
R0100:C00132------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:PT5ST6        434.92     9.426 No_date   29:06    40.97  n/a      .000
     [RDT= 1.00] out<-    1.0 01:DRAIN4        434.92     9.061 No_date   29:16    40.97  n/a      .000
      [L/S/n=  324./ .100/.043]
      {Vmax=  .507:Dmax= 1.619}
R0100:C00133------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:D4              1.73      .112 No_date   28:33    57.07 .644      .000
      [CN= 88.0: N= 3.00: Tp=  .60]
      [IaREC= 4.00: SMIN= 14.94: SMAX= 99.61: SK= .010]
      [InterEventTime=  12.00]
R0100:C00134------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:Area-B         24.04     4.871 No_date   28:02    66.17 .747      .000
      [XIMP=.62:TIMP=.77]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious    area: IAper= 4.67:SLPP=1.40:LGP=  50.:MNP=.250:SCP=   .0]
      [Impervious  area: IAimp= 1.57:SLPI=1.40:LGI= 693.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00135------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:Area-B         24.04     4.871 No_date   28:02    66.17  n/a      .000
                out <=    1.0 01:SWMF-B         24.04      .641 No_date   28:41    66.17  n/a      .000
           overflow <=    1.0 03:SWMBOVF          .00      .000 No_date    0:00      .00  n/a      .000
     {MxStoUsed=.9727E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00136------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:DRAIN4        434.92     9.061 No_date   29:16    40.97  n/a      .000
                    +     1.0 02:D4              1.73      .112 No_date   28:33    57.07  n/a      .000
                    +     1.0 02:SWMF-B         24.04      .641 No_date   28:41    66.17  n/a      .000
                    +     1.0 02:SWMBOVF          .00      .000 No_date    0:00      .00  n/a      .000
                 SUM=     1.0 01:D4-EX         460.69     9.722 No_date   29:15    42.35  n/a      .000
R0100:C00137------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:D4-EX         460.69     9.722 No_date   29:15    42.35  n/a      .000
     [RDT= 1.00] out<-    1.0 01:DRAIN5        460.69     9.564 No_date   29:26    42.35  n/a      .000
      [L/S/n=  413./ .160/.033]
      {Vmax=  .703:Dmax= 1.106}
R0100:C00138------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:D5              1.90      .104 No_date   28:40    54.04 .610      .000
      [CN= 86.0: N= 3.00: Tp=  .69]
      [IaREC= 4.00: SMIN= 17.43: SMAX=116.21: SK= .010]
      [InterEventTime=  12.00]
R0100:C00139------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:O-13SDF         9.74      .675 No_date   28:21    50.83 .574      .000
      [CN= 81.0: N= 3.00: Tp=  .43]
      [IaREC= 4.00: SMIN= 25.21: SMAX=168.09: SK= .010]
      [InterEventTime=  12.00]
R0100:C00140------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:O-13SDF         9.74      .675 No_date   28:21    50.83  n/a      .000
                out <=    1.0 01:SDF             9.74      .070 No_date   30:50    50.83  n/a      .000
           overflow <=    1.0 03:OVFSDF           .00      .000 No_date    0:00      .00  n/a      .000
     {MxStoUsed=.2813E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00141------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:DRAIN5        460.69     9.564 No_date   29:26    42.35  n/a      .000
                    +     1.0 02:D5              1.90      .104 No_date   28:40    54.04  n/a      .000
                    +     1.0 02:SDF             9.74      .070 No_date   30:50    50.83  n/a      .000
                 SUM=     1.0 01:PT6MC         472.33     9.694 No_date   29:26    42.57  n/a      .000
R0100:C00142------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:O-15           10.67      .940 No_date   28:13    49.72 .561      .000
      [CN= 82.0: N= 3.00: Tp=  .30]
      [IaREC= 4.00: SMIN= 23.09: SMAX=153.94: SK= .010]
      [InterEventTime=  12.00]
R0100:C00143------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:PT6MC         472.33     9.694 No_date   29:26    42.57  n/a      .000
                    +     1.0 02:O-15           10.67      .940 No_date   28:13    49.72  n/a      .000
                 SUM=     1.0 01:M-C           483.00     9.844 No_date   29:26    42.73  n/a      .000
R0100:C00144------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:M-C           483.00     9.844 No_date   29:26    42.73  n/a      .000
     [RDT= 1.00] out<-    1.0 01:O-14Ch        483.00     8.880 No_date   29:52    42.73  n/a      .000
      [L/S/n=  845./ .100/.033]
      {Vmax=  .556:Dmax= 1.861}
R0100:C00145------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:O-14            5.00      .722 No_date   28:04    49.72 .561      .000
      [CN= 82.0: N= 3.00: Tp=  .13]
      [IaREC= 4.00: SMIN= 23.09: SMAX=153.94: SK= .010]
      [InterEventTime=  12.00]
R0100:C00146------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:O-14Ch        483.00     8.880 No_date   29:52    42.73  n/a      .000
                    +     1.0 02:O-14            5.00      .722 No_date   28:04    49.72  n/a      .000
                 SUM=     1.0 01:OKEEFE        488.00     8.925 No_date   29:52    42.80  n/a      .000
#*************************************************************************
#    Okeefe Pond
#    - Rating curve obtained assuming 40m3/ha in 24 hours for quality control
#      and a ratio of the catchment area to the West Clarke pond rating curve
#      from the MSS for the next coordinates
#*************************************************************************
R0100:C00147------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-D2         18.67     3.580 No_date   28:01    70.58 .797      .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 75.0]
      [Pervious    area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious  area: IAimp= 1.57:SLPI= .75:LGI= 353.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0100:C00148------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:S-1-D2         18.67     3.580 No_date   28:01    70.58  n/a      .000
     Major System   /     1.0 02:S-1-D2J          .00      .000 No_date    0:00      .00  n/a      .000
     Minor System   \     1.0 03:S-1-D2N        18.67     2.097 No_date   27:52    70.87  n/a      .000
      {MjSysSto=.8794E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00149------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:S-1-D2J          .00      .000 No_date    0:00      .00  n/a      .000
                    +     1.0 02:S-1-D2N        18.67     2.097 No_date   27:52    70.87  n/a      .000
                 SUM=     1.0 01:S-1-D2S        18.67     2.097 No_date   27:52    70.87  n/a      .000
R0100:C00150------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:S-1-D2S        18.67     2.097 No_date   27:52    70.87  n/a      .000
                out <=    1.0 01:S-1-D2R        17.89      .223 No_date   28:30    70.87  n/a      .000
           overflow <=    1.0 03:S-1-D2Rovf       .78      .526 No_date   28:30    70.87  n/a      .000
     {MxStoUsed=.7445E+00  m3, TotOvfVol=.5562E-01  m3, N-Ovf=    3, TotDurOvf=    1.hrs}
R0100:C00151------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-D3          6.79     1.405 No_date   28:00    70.58 .797      .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 75.0]
      [Pervious    area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious  area: IAimp= 1.57:SLPI= .75:LGI= 213.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0100:C00152------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:S-1-D3          6.79     1.405 No_date   28:00    70.58  n/a      .000
     Major System   /     1.0 02:S-1-D3J          .00      .000 No_date    0:00      .00  n/a      .000
     Minor System   \     1.0 03:S-1-D3N         6.79      .831 No_date   27:51    70.87  n/a      .000
      {MjSysSto=.3005E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00153------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:S-1-D3J          .00      .000 No_date    0:00      .00  n/a      .000
                    +     1.0 02:S-1-D3N         6.79      .831 No_date   27:51    70.87  n/a      .000
                 SUM=     1.0 01:S-1-D3S         6.79      .831 No_date   27:51    70.87  n/a      .000
R0100:C00154------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:S-1-D3S         6.79      .831 No_date   27:51    70.87  n/a      .000
                out <=    1.0 01:S-1-D3R         6.51      .081 No_date   28:27    70.87  n/a      .000
           overflow <=    1.0 03:S-1-D3Rovf       .28      .186 No_date   28:27    70.87  n/a      .000
     {MxStoUsed=.2708E+00  m3, TotOvfVol=.2018E-01  m3, N-Ovf=    2, TotDurOvf=    1.hrs}
R0100:C00155------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N_OK       53064.36   145.101 No_date   33:45    38.81  n/a      .000
                    +     1.0 02:OKEEFE        488.00     8.925 No_date   29:52    42.80  n/a      .000
                    +     1.0 02:S-1-D2R        17.89      .223 No_date   28:30    70.87  n/a      .000
                    +     1.0 02:S-1-D3R         6.51      .081 No_date   28:27    70.87  n/a      .000
                    +     1.0 02:S-1-D2Rovf       .78      .526 No_date   28:30    70.87  n/a      .000
                    +     1.0 02:S-1-D3Rovf       .28      .186 No_date   28:27    70.87  n/a      .000
                 SUM=     1.0 01:SN_OK      53577.81   148.295 No_date   33:05    38.86  n/a      .000
R0100:C00156------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_OK      53577.81   148.295 No_date   33:05    38.86  n/a      .000
      fname :SN_OK.0100
      remark:Total Flows at Okeefe Drain
#
# Hydrograph from Node Okeefe routed to Node at Foster Drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 6215
#
R0100:C00157------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_OK      53577.81   148.295 No_date   33:05    38.86  n/a      .000
     [RDT= 1.00] out<-    1.0 01:N_FO       53577.81   147.939 No_date   33:45    38.86  n/a      .000
      [L/S/n= 1183./ .076/.035]
      {Vmax= 1.295:Dmax= 3.590}
#*************************************************************************
#    Catchment FOSTER
#    - To Foster ditch (north of the Jock)
#    - Partially developed (medium density); remaining agricultural
#    - 2020-12-01 JFSA Foster area is 332 as per Foster SWMF Environmental Study Report, CH2MHILL, Aug 2013.
#    - 2020-12-01 decrease Foster drainage area from (373 HA) to (307.98 HA) after increasing Okeefe drainage area to (5
#    - 2021-02-12  update Foster area to 325.44 ha as measured from QGIS
#*************************************************************************
R0100:C00158------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:FOSTER        325.44    36.526 No_date   28:10    65.13 .735      .000
      [XIMP=.55:TIMP=.55]
      [LOSS= 2 :CN= 74.0]
      [Pervious    area: IAper= 4.67:SLPP= .50:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious  area: IAimp= 1.57:SLPI= .50:LGI=1473.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 36.67: SMAX=244.49: SK= .010]
#*************************************************************************
#    Foster Pond
#    - Rating curve obtained assuming 40m3/ha in 24 hours for quality control
#      and a ratio of the catchment area to the West Clarke pond rating curve
#      from the MSS for the next coordinates
#*************************************************************************
R0100:C00159------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:FOSTER        325.44    36.526 No_date   28:10    65.13  n/a      .000
                out <=    1.0 01:P_FOS         325.44     9.091 No_date   29:01    65.13  n/a      .000
           overflow <=    1.0 03:FO-OVF           .00      .000 No_date    0:00      .00  n/a      .000
     {MxStoUsed=.8792E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00160------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:P_FOS         325.44     9.091 No_date   29:01    65.13  n/a      .000
                    +     1.0 02:FO-OVF           .00      .000 No_date    0:00      .00  n/a      .000
                 SUM=     1.0 01:FOSTER-OUT    325.44     9.091 No_date   29:01    65.13  n/a      .000
#*************************************************************************
R0100:C00161------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:W_CLAR_BRA     73.29    11.683 No_date   28:05    70.23 .793      .000
      [XIMP=.60:TIMP=.65]
      [LOSS= 2 :CN= 77.0]
      [Pervious    area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious  area: IAimp= 1.57:SLPI= .50:LGI= 699.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0100:C00162------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:W_CLAR_BRA     73.29    11.683 No_date   28:05    70.23  n/a      .000
                out <=    1.0 01:MS_P10         73.29     1.240 No_date   29:12    70.23  n/a      .000
           overflow <=    1.0 03:P10-OVF          .00      .000 No_date    0:00      .00  n/a      .000
     {MxStoUsed=.2223E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00163------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-FO-D2       4.94      .896 No_date   28:00    65.13 .735      .000
      [XIMP=.55:TIMP=.55]
      [LOSS= 2 :CN= 74.0]
      [Pervious    area: IAper= 4.67:SLPP= .50:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious  area: IAimp= 1.57:SLPI= .50:LGI= 181.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 36.67: SMAX=244.49: SK= .010]
R0100:C00164------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:S-1-FO-D2       4.94      .896 No_date   28:00    65.13  n/a      .000
     Major System   /     1.0 02:S-1-FO-D2J       .00      .000 No_date    0:00      .00  n/a      .000
     Minor System   \     1.0 03:S-1-FO-D2N      4.94      .508 No_date   27:51    65.14  n/a      .000
      {MjSysSto=.2151E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00165------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:S-1-FO-D2J       .00      .000 No_date    0:00      .00  n/a      .000
                    +     1.0 02:S-1-FO-D2N      4.94      .508 No_date   27:51    65.14  n/a      .000
                 SUM=     1.0 01:S-1-FO-D2S      4.94      .508 No_date   27:51    65.14  n/a      .000
R0100:C00166------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:S-1-FO-D2S      4.94      .508 No_date   27:51    65.14  n/a      .000
                out <=    1.0 01:S-1-FO-D2R      4.94      .057 No_date   29:33    65.14  n/a      .000
           overflow <=    1.0 03:S-1FOD2ovf       .00      .000 No_date    0:00      .00  n/a      .000
     {MxStoUsed=.1916E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00167------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:FOSTER-OUT    325.44     9.091 No_date   29:01    65.13  n/a      .000
                    +     1.0 02:S-1-FO-D2R      4.94      .057 No_date   29:33    65.14  n/a      .000
                    +     1.0 02:S-1FOD2ovf       .00      .000 No_date    0:00      .00  n/a      .000
                 SUM=     1.0 01:980           330.38     9.147 No_date   29:01    65.13  n/a      .000
R0100:C00168------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:980           330.38     9.147 No_date   29:01    65.13  n/a      .000
      fname :980.0100
      remark:Total Flows at Station 980 on Foster Drain
#
# Hydrograph from Node Foster SWM (Station 980)to Node at station 520
# Channel X-Section obtained from RVCA Hydraulic Model - Station 980
#
R0100:C00169------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:980           330.38     9.147 No_date   29:01    65.13  n/a      .000
 *   [RDT= 1.00] out<-    1.0 01:980-out       330.38     8.660 No_date   29:39    65.13  n/a      .000
      [L/S/n=  460./ .043/.035]
      {Vmax=  .540:Dmax= 1.669}
R0100:C00170------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-FO-D1       5.11     1.040 No_date   28:00    69.99 .790      .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 74.0]
      [Pervious    area: IAper= 4.67:SLPP= .50:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious  area: IAimp= 1.57:SLPI= .50:LGI= 185.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 36.67: SMAX=244.49: SK= .010]
R0100:C00171------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:S-1-FO-D1       5.11     1.040 No_date   28:00    69.99  n/a      .000
     Major System   /     1.0 02:S-1-FO-D1J       .00      .000 No_date    0:00      .00  n/a      .000
     Minor System   \     1.0 03:S-1-FO-D1N      5.11      .605 No_date   27:51    70.27  n/a      .000
      {MjSysSto=.2316E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00172------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:S-1-FO-D1N      5.11      .605 No_date   27:51    70.27  n/a      .000
                    +     1.0 02:S-1-FO-D1J       .00      .000 No_date    0:00      .00  n/a      .000
                 SUM=     1.0 01:S-1-FO-D1S      5.11      .605 No_date   27:51    70.27  n/a      .000
R0100:C00173------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:S-1-FO-D1S      5.11      .605 No_date   27:51    70.27  n/a      .000
                out <=    1.0 01:S-1-FO-D1R      4.93      .061 No_date   28:29    70.27  n/a      .000
           overflow <=    1.0 03:S-1FOD1ovf       .18      .133 No_date   28:29    70.27  n/a      .000
     {MxStoUsed=.2038E+00  m3, TotOvfVol=.1295E-01  m3, N-Ovf=    3, TotDurOvf=    1.hrs}
R0100:C00174------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:980-out       330.38     8.660 No_date   29:39    65.13  n/a      .000
                    +     1.0 02:S-1-FO-D1R      4.93      .061 No_date   28:29    70.27  n/a      .000
                    +     1.0 02:S-1FOD1ovf       .18      .133 No_date   28:29    70.27  n/a      .000
                 SUM=     1.0 01:520           335.49     8.721 No_date   29:39    65.21  n/a      .000
R0100:C00175------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:520           335.49     8.721 No_date   29:39    65.21  n/a      .000
      fname :520.0100
      remark:Total Flows at Sation 520 on Foster Drain
# Hydrograph from Node at Station 520 (Foster Drain) to Node at station 6016 (Jock River)
# Channel X-Section obtained from RVCA Hydraulic Model - Station 520
#
R0100:C00176------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:520           335.49     8.721 No_date   29:39    65.21  n/a      .000
     [RDT= 1.00] out<-    1.0 01:520-out       335.49     8.685 No_date   29:42    65.21  n/a      .000
      [L/S/n=  860./ .587/.035]
      {Vmax= 1.594:Dmax=  .799}
R0100:C00177------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-FO-F-D     14.96     2.819 No_date   28:01    69.99 .790      .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 74.0]
      [Pervious    area: IAper= 4.67:SLPP= .50:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious  area: IAimp= 1.57:SLPI= .50:LGI= 316.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 36.67: SMAX=244.49: SK= .010]
R0100:C00178------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:S-1FO-F-D      14.96     2.819 No_date   28:01    69.99  n/a      .000
     Major System   /     1.0 02:S-1FO-F-DJ       .00      .000 No_date    0:00      .00  n/a      .000
     Minor System   \     1.0 03:S-1FO-F-DN     14.96     1.615 No_date   27:51    70.35  n/a      .000
      {MjSysSto=.7376E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00179------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:S-1FO-F-DJ       .00      .000 No_date    0:00      .00  n/a      .000
                    +     1.0 02:S-1FO-F-DN     14.96     1.615 No_date   27:51    70.35  n/a      .000
                 SUM=     1.0 01:S-1FO-F-DS     14.96     1.615 No_date   27:51    70.35  n/a      .000
R0100:C00180------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:S-1FO-F-DS     14.96     1.615 No_date   27:51    70.35  n/a      .000
                out <=    1.0 01:S-1FO-F-DR     14.40      .179 No_date   28:32    70.35  n/a      .000
           overflow <=    1.0 03:S-1FoFDovf       .56      .392 No_date   28:32    70.35  n/a      .000
     {MxStoUsed=.5966E+00  m3, TotOvfVol=.3962E-01  m3, N-Ovf=    2, TotDurOvf=    1.hrs}
R0100:C00181------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-D8          5.27     1.181 No_date   28:01    51.48 .581      .000
      [XIMP=.32:TIMP=.65]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious    area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
```

```
      [Impervious   area: IAimp=  .79:SLPI= .75:LGI= 187.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00182------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:S-1-D8          5.27    1.181 No_date   28:01   51.48  n/a     .000
     Major System   /     1.0 02:S-1-D8J          .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:S-1-D8N         5.27     .672 No_date   27:52   51.52  n/a     .000
      {MjSysSto=.3055E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00183------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:S-1-D8J          .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:S-1-D8N         5.27     .672 No_date   27:52   51.52  n/a     .000
                 SUM=     1.0 01:S-1-D8S         5.27     .672 No_date   27:52   51.52  n/a     .000
R0100:C00184------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:S-1-D8S         5.27     .672 No_date   27:52   51.52  n/a     .000
                out <=    1.0 01:S-1-D8R         5.27     .061 No_date   28:45   51.52  n/a     .000
           overflow <=    1.0 03:S-1-D8Rovf       .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.2034E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00185------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:S-1-A          75.88    3.578 No_date   28:36   45.95 .519     .000
      [CN= 77.0: N= 3.00: Tp=  .62]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0100:C00186------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:W_CLAR_UND    35.65    1.108 No_date   29:10   45.95 .519     .000
      [CN= 77.0: N= 3.00: Tp= 1.10]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0100:C00187------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N_FO        53577.81  147.939 No_date   33:45   38.86  n/a     .000
                    +     1.0 02:520-out       335.49    8.685 No_date   29:42   65.21  n/a     .000
                    +     1.0 02:MS_P10         73.29    1.240 No_date   29:12   70.23  n/a     .000
                    +     1.0 02:P10-OVF          .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:W_CLAR_UND    35.65    1.108 No_date   29:10   45.95  n/a     .000
                    +     1.0 02:S-1FoFDovf       .56     .392 No_date   28:32   70.35  n/a     .000
                    +     1.0 02:S-1FO-F-DR    14.40     .179 No_date   28:32   70.35  n/a     .000
                    +     1.0 02:S-1-D8Rovf       .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:S-1-D8R         5.27     .061 No_date   28:45   51.52  n/a     .000
                    +     1.0 02:S-1-A          75.88    3.578 No_date   28:36   45.95  n/a     .000
                 SUM=     1.0 01:SN_FO       54118.35  153.648 No_date   33:27   39.09  n/a     .000
R0100:C00188------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_FO       54118.35  153.648 No_date   33:27   39.09  n/a     .000
      fname :SN_FO.0100
      remark:Total Flows at Foster Drain
# Hydrograph from Node Foster routed to Node at Cedarview Road
# Channel X-Section obtained from RVCA Hydraulic Model - Station 6016
#
R0100:C00189------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_FO       54118.35  153.648 No_date   33:27   39.09  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:N_CE        54118.35  153.522 No_date   33:28   39.09  n/a     .000
      [L/S/n=  159./ .082/.035]
      {Vmax= 1.456:Dmax= 4.475}
#*******************************************************************************
#    Catchment S-1
#    - To Jock River (north and south of Jock)
#    - Primarily agricultural fields; portion of sand quarry
#*******************************************************************************
R0100:C00190------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:S-1-B          55.36    3.260 No_date   28:23   45.95 .519     .000
      [CN= 77.0: N= 3.00: Tp=  .45]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
#    -  JFSA 2021-02-24 change the name from S-1-BCDC to S-1-A and S-1-B. Change their TP values based on the new areas
#    -  JFSA 2021-02-24 "S-1-BCDC-1" and "S-1-BCDC-2" are not existing anymore. "S-1-BCDC-1" is part of "S-1-FO-D2" and
#    -  JFSA 2021-01-19, after adding Greenbank pond, "S-1-BCDC-3" is not existing anymore
R0100:C00191------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-D1         21.67    4.117 No_date   28:01   70.58 .797     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .75:LGI= 380.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0100:C00192------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:S-1-D1         21.67    4.117 No_date   28:01   70.58  n/a     .000
     Major System   /     1.0 02:S-1-D1J          .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:S-1-D1N        21.67    2.409 No_date   27:52   70.60  n/a     .000
      {MjSysSto=.1024E+04, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00193------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:S-1-D1J          .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:S-1-D1N        21.67    2.409 No_date   27:52   70.60  n/a     .000
                 SUM=     1.0 01:S-1-D1S        21.67    2.409 No_date   27:52   70.60  n/a     .000
R0100:C00194------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:S-1-D1S        21.67    2.409 No_date   27:52   70.60  n/a     .000
                out <=    1.0 01:S-1-D1R        20.84     .259 No_date   28:32   70.60  n/a     .000
           overflow <=    1.0 03:S-1-D1Rovf       .83     .580 No_date   28:32   70.60  n/a     .000
     {MxStoUsed=.8642E+00  m3, TotOvfVol=.5868E-01  m3, N-Ovf=    3, TotDurOvf=    1.hrs}
R0100:C00195------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-D4          3.28     .705 No_date   28:00   70.58 .797     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .75:LGI= 148.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0100:C00196------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:S-1-D4          3.28     .705 No_date   28:00   70.58  n/a     .000
     Major System   /     1.0 02:S-1-D4J          .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:S-1-D4N         3.28     .421 No_date   27:51   70.91  n/a     .000
      {MjSysSto=.1397E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00197------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:S-1-D4J          .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:S-1-D4N         3.28     .421 No_date   27:51   70.91  n/a     .000
                 SUM=     1.0 01:S-1-D4S         3.28     .421 No_date   27:51   70.91  n/a     .000
R0100:C00198------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:S-1-D4S         3.28     .421 No_date   27:51   70.91  n/a     .000
                out <=    1.0 01:S-1-D4R         3.14     .039 No_date   28:25   70.91  n/a     .000
           overflow <=    1.0 03:S-1-D4Rovf       .14     .090 No_date   28:25   70.91  n/a     .000
     {MxStoUsed=.1308E+00  m3, TotOvfVol=.9840E-02  m3, N-Ovf=    3, TotDurOvf=    1.hrs}
R0100:C00199------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-D5         12.84    2.544 No_date   28:01   70.58 .797     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .75:LGI= 293.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0100:C00200------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:S-1-D5         12.84    2.544 No_date   28:01   70.58  n/a     .000
     Major System   /     1.0 02:S-1-D5J          .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:S-1-D5N        12.84    1.500 No_date   27:51   70.80  n/a     .000
      {MjSysSto=.5837E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00201------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:S-1-D5J          .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:S-1-D5N        12.84    1.500 No_date   27:51   70.80  n/a     .000
                 SUM=     1.0 01:S-1-D5S        12.84    1.500 No_date   27:51   70.80  n/a     .000
R0100:C00202------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:S-1-D5S        12.84    1.500 No_date   27:51   70.80  n/a     .000
                out <=    1.0 01:S-1-D5R        12.31     .154 No_date   28:29   70.80  n/a     .000
           overflow <=    1.0 03:S-1-D5Rovf       .53     .353 No_date   28:29   70.80  n/a     .000
     {MxStoUsed=.5120E+00  m3, TotOvfVol=.3721E-01  m3, N-Ovf=    2, TotDurOvf=    1.hrs}
R0100:C00203------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-D6          1.75     .382 No_date   28:00   70.58 .797     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .75:LGI= 108.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0100:C00204------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:S-1-D6          1.75     .382 No_date   28:00   70.58  n/a     .000
     Major System   /     1.0 02:S-1-D6J          .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:S-1-D6N         1.75     .232 No_date   27:51   70.75  n/a     .000
      {MjSysSto=.7255E+02, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00205------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:S-1-D6J          .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:S-1-D6N         1.75     .232 No_date   27:51   70.75  n/a     .000
                 SUM=     1.0 01:S-1-D6S         1.75     .232 No_date   27:51   70.75  n/a     .000
R0100:C00206------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:S-1-D6S         1.75     .232 No_date   27:51   70.75  n/a     .000
                out <=    1.0 01:S-1-D6R         1.68     .021 No_date   28:25   70.75  n/a     .000
           overflow <=    1.0 03:S-1-D6Rovf       .07     .047 No_date   28:25   70.75  n/a     .000
     {MxStoUsed=.6980E-01  m3, TotOvfVol=.4972E-02  m3, N-Ovf=    3, TotDurOvf=    1.hrs}
R0100:C00207------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S-1-D7          2.03     .442 No_date   28:00   70.58 .797     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .75:LGI= 116.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0100:C00208------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:S-1-D7          2.03     .442 No_date   28:00   70.58  n/a     .000
     Major System   /     1.0 02:S-1-D7J          .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:S-1-D7N         2.03     .265 No_date   27:51   70.90  n/a     .000
      {MjSysSto=.8643E+02, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00209------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:S-1-D7J          .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:S-1-D7N         2.03     .265 No_date   27:51   70.90  n/a     .000
                 SUM=     1.0 01:S-1-D7S         2.03     .265 No_date   27:51   70.90  n/a     .000
R0100:C00210------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:S-1-D7S         2.03     .265 No_date   27:51   70.90  n/a     .000
                out <=    1.0 01:S-1-D7R         1.95     .024 No_date   28:25   70.90  n/a     .000
           overflow <=    1.0 03:S-1-D7Rovf       .08     .055 No_date   28:25   70.90  n/a     .000
     {MxStoUsed=.8100E-01  m3, TotOvfVol=.6001E-02  m3, N-Ovf=    2, TotDurOvf=    1.hrs}
#    Catchment W_CLAR
#    - To West Clarke Drain (south of the Jock)
#    - Subdivision with 43% imp. as per Barrhaven South MSS
#    - 2020-11-30 update CLARKE Tributary Drainage Area to  = 121 ha based on P598(04)-11
#    - 2020-11-30 split CLARKE Drainage Area to MAJOR and ALL
#*******************************************************************************
R0100:C00211------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:W_CLAR_MJ       1.77     .332 No_date   28:00   66.20 .747     .000
      [XIMP=.46:TIMP=.59]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 109.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
# 5-Year + 12% Capture
R0100:C00212------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:W_CLAR_MJ       1.77     .332 No_date   28:00   66.20  n/a     .000
                out <=    1.0 01:W_CLAR_MJn      1.69     .213 No_date   27:52   66.22  n/a     .000
           overflow <=    1.0 03:W_CLAR_MJj       .08     .115 No_date   28:01   66.20  n/a     .000
     {MxStoUsed=.1530E-03  m3, TotOvfVol=.5337E-02  m3, N-Ovf=    1, TotDurOvf=    0.hrs}
R0100:C00213------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:W_CLAR_ALL   119.40   19.638 No_date   28:04   70.23 .793     .000
      [XIMP=.60:TIMP=.65]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 892.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0100:C00214------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:W_CLAR_ALL   119.40   19.638 No_date   28:04   70.23  n/a     .000
                    +     1.0 02:W_CLAR_MJj       .08     .115 No_date   28:01   66.20  n/a     .000
                 SUM=     1.0 01:W_CLAR       119.48   19.657 No_date   28:04   70.22  n/a     .000
R0100:C00215------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:W_CLAR       119.48   19.657 No_date   28:04   70.22  n/a     .000
      fname :W_CLAR.0100
      remark:Total Flows to West Clarke
#*******************************************************************************
#    West Clarke Pond 2
#    - Rating curve obtained from Barrhaven South MSS modeling
#    - Tributary Drainage Area to MSS Pond 2 = 241 ha
#*******************************************************************************
R0100:C00216------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:W_CLAR       119.48   19.657 No_date   28:04   70.22  n/a     .000
                out <=    1.0 01:MS_P2        119.48   13.064 No_date   28:13   70.22  n/a     .000
           overflow <=    1.0 03:P2-OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.3189E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
#*******************************************************************************
R0100:C00217------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N_CE       54118.35  153.522 No_date   33:28   39.09  n/a     .000
                    +     1.0 02:S-1-D4R        3.14     .039 No_date   28:25   70.91  n/a     .000
                    +     1.0 02:S-1-D5R       12.31     .154 No_date   28:29   70.80  n/a     .000
                    +     1.0 02:S-1-D4Rovf      .14     .090 No_date   28:25   70.91  n/a     .000
                    +     1.0 02:S-1-D5Rovf      .53     .353 No_date   28:29   70.80  n/a     .000
                    +     1.0 02:MS_P2        119.48   13.064 No_date   28:13   70.22  n/a     .000
                    +     1.0 02:P2-OVF          .00     .000 No_date    0:00     .00  n/a     .000
                 SUM=     1.0 01:SN_CE      54253.95  154.583 No_date   33:28   39.17  n/a     .000
R0100:C00218------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_CE      54253.95  154.583 No_date   33:28   39.17  n/a     .000
      fname :SN_CE.0100
      remark:Total Flows before Station 5737 on Jock River
# Channel X-Section obtained from RVCA Hydraulic Model - Station 5737
# 2021-02-25 add station 5737 before station 5002. Station 5737 was extracted from the HEC-RAS model T:\PROJ\1474-16\Des
# JFSA 2021-03-02  change the slope to 0.0175% instead of 0.02593 to stabilize the model
R0100:C00219------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_CE      54253.95  154.583 No_date   33:28   39.17  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:5737       54253.95  144.603 No_date   35:50   39.17  n/a     .000
      [L/S/n=  270./ .018/.035]
      {Vmax=  .873:Dmax= 5.577}
R0100:C00220------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:5737       54253.95  144.603 No_date   35:50   39.17  n/a     .000
                    +     1.0 02:S-1-D1R       20.84     .259 No_date   28:32   70.60  n/a     .000
                    +     1.0 02:S-1-D6R        1.68     .021 No_date   28:25   70.75  n/a     .000
                    +     1.0 02:S-1-D7R        1.95     .024 No_date   28:25   70.90  n/a     .000
                    +     1.0 02:S-1-D1Rovf      .83     .580 No_date   28:32   70.60  n/a     .000
                    +     1.0 02:S-1-D6Rovf      .07     .047 No_date   28:25   70.75  n/a     .000
                    +     1.0 02:S-1-D7Rovf      .08     .055 No_date   28:25   70.90  n/a     .000
                 SUM=     1.0 01:5002       54279.40  144.823 No_date   35:50   39.19  n/a     .000
R0100:C00221------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:5002       54279.40  144.823 No_date   35:50   39.19  n/a     .000
      fname :5002.0100
      remark:Total Flows before Station 5002 on Jock River
# Hydrograph from Node Cedarview Road routed to Node at West Clarke Drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 5002
# JFSA 2021-02-19 Change the slope from 0.01 % (as per Stantec Report 2007) to 0.0255 % so the model will be more stable
# JFSA 2021-02-19 Change to three ROUTE CHANNEL with length 275 m each instead of one with 825 m length so the model wil
# JFSA 2021-02-26 change the length of 5002 route channel from 825 m to 736 m. That is because of adding station 5737 be
R0100:C00222------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:5002       54279.40  144.823 No_date   35:50   39.19  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:N_WCa      54279.40  144.811 No_date   35:54   39.19  n/a     .000
      [L/S/n=  245./ .095/.035]
      {Vmax= 1.319:Dmax= 3.149}
R0100:C00223------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:N_WCa      54279.40  144.811 No_date   35:54   39.19  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:N_WCb      54279.40  144.784 No_date   36:02   39.19  n/a     .000
      [L/S/n=  245./ .095/.035]
      {Vmax= 1.319:Dmax= 3.149}
R0100:C00224------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:N_WCb      54279.40  144.784 No_date   36:02   39.19  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:N_WC       54279.40  144.566 No_date   36:23   39.19  n/a     .000
      [L/S/n=  245./ .095/.035]
      {Vmax= 1.319:Dmax= 3.149}
#*******************************************************************************
# Hydrograph from Node West Clarke routed to Node at Kennedy - Burnett Drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 4534
#
R0100:C00225------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:N_WC       54279.40  144.566 No_date   36:23   39.19  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:N_KB       54279.40  144.071 No_date   36:49   39.18  n/a     .000
      [L/S/n= 1020./ .050/.035]
      {Vmax= 1.004:Dmax= 3.867}
#*******************************************************************************
#    Catchment KEN_BU
#    - To Kennedy-Burnett SWM Facility
#    - Outlets to Fraser-Clarke drain (north of the Jock)
#    - Medium density residential subdivision
#*******************************************************************************
#*******************************************************************************
#   Existing Kennedy-Burnett SWM Facility
#    - Rating curve obtained from URTKBP
#    - Tributary Drainage Area to Pond = 160 ha
#*******************************************************************************
R0100:C00226------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-01A        40.82    5.490 No_date   28:09   36.71 .415     .000
      [XIMP=.10:TIMP=.40]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .50:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI= .50:LGI= 522.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00227------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-01A        40.82    5.490 No_date   28:09   36.71  n/a     .000
     Major System   /     1.0 02:KB-01A-MJ       .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-01A-MN     40.82    3.600 No_date   28:44   36.91  n/a     .000
      {MjSysSto=.1774E+04, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00228------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-01A-MJ       .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:KB-01A-MN     40.82    3.600 No_date   28:44   36.91  n/a     .000
                 SUM=     1.0 01:KB-01A-S      40.82    3.600 No_date   28:44   36.91  n/a     .000
R0100:C00229------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-01B        31.10    4.072 No_date   28:06   40.61 .458     .000
      [XIMP=.19:TIMP=.38]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP= .42:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI= .42:LGI= 455.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00230------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-01B        31.10    4.072 No_date   28:06   40.61  n/a     .000
     Major System   /     1.0 02:KB-01B-MJ       .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-01B-MN     31.10    1.585 No_date   27:51   40.77  n/a     .000
      {MjSysSto=.3465E+04, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00231------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-01B-MJ       .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:KB-01B-MN     31.10    1.585 No_date   27:51   40.77  n/a     .000
                 SUM=     1.0 01:KB-01B-S      31.10    1.585 No_date   27:51   40.77  n/a     .000
R0100:C00232------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-01C        13.78    2.471 No_date   28:03   41.89 .473     .000
      [XIMP=.20:TIMP=.41]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI= .50:LGI= 303.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00233------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-01C        13.78    2.471 No_date   28:03   41.89  n/a     .000
     Major System   /     1.0 02:KB-01C-MJ       .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-01C-MN     13.78    1.350 No_date   28:37   42.09  n/a     .000
      {MjSysSto=.8650E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00234------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-01C-MJ       .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:KB-01C-MN     13.78    1.350 No_date   28:37   42.09  n/a     .000
                 SUM=     1.0 01:KB-01C-S      13.78    1.350 No_date   28:37   42.09  n/a     .000
R0100:C00235------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-03         84.78   12.777 No_date   28:07   41.33 .467     .000
      [XIMP=.20:TIMP=.39]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI= .63:LGI= 752.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00236------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-03         84.78   12.777 No_date   28:07   41.33  n/a     .000
     Major System   /     1.0 02:KB-03-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-03-MN      84.78    5.270 No_date   29:11   41.33  n/a     .000
      {MjSysSto=.8591E+04, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00237------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-03-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:KB-03-MN      84.78    5.270 No_date   29:11   41.33  n/a     .000
                 SUM=     1.0 01:KB-03-S       84.78    5.270 No_date   29:11   41.33  n/a     .000
R0100:C00238------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-04          6.95    1.754 No_date   28:00   78.30 .884     .000
      [XIMP=.85:TIMP=.85]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .94:SLPI= .50:LGI= 215.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00239------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-04          6.95    1.754 No_date   28:00   78.30  n/a     .000
     Major System   /     1.0 02:KB-04-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-04-MN       6.95     .503 No_date   27:43   78.64  n/a     .000
      {MjSysSto=.1121E+04, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00240------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-04-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:KB-04-MN       6.95     .503 No_date   27:43   78.64  n/a     .000
                 SUM=     1.0 01:KB-04-S        6.95     .503 No_date   27:43   78.64  n/a     .000
```

```
R0100:C00241------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-05          5.19    1.406 No_date   28:00   82.69 .934     .000
      [XIMP=.93:TIMP=.93]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 186.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00242------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-06         12.93    3.585 No_date   28:00   79.73 .900     .000
      [XIMP=.87:TIMP=.87]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .94:SLPI=4.75:LGI= 294.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00243------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-06         12.93    3.585 No_date   28:00   79.73  n/a     .000
     Major System   /     1.0 02:KB-06-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-06-MN      12.93    2.262 No_date   27:51   79.89  n/a     .000
      {MjSysSto=.6247E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00244------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-06-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:KB-06-MN      12.93    2.262 No_date   27:51   79.89  n/a     .000
                 SUM=     1.0 01:KB-06-S       12.93    2.262 No_date   27:51   79.89  n/a     .000
R0100:C00245------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-11          4.03    1.012 No_date   28:00   67.54 .763     .000
      [XIMP=.68:TIMP=.68]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI=2.00:LGI= 164.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00246------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-11          4.03    1.012 No_date   28:00   67.54  n/a     .000
     Major System   /     1.0 02:KB-11-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-11-MN       4.03     .577 No_date   27:51   67.60  n/a     .000
      {MjSysSto=.2184E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00247------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-11-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:KB-11-MN       4.03     .577 No_date   27:51   67.60  n/a     .000
                 SUM=     1.0 01:KB-11-S        4.03     .577 No_date   27:51   67.60  n/a     .000
R0100:C00248------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:S1             4.99    1.426 No_date   28:00   82.69 .934     .000
      [XIMP=.93:TIMP=.93]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=2.00:LGI= 182.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00249------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-15          2.15     .548 No_date   28:00   75.20 .849     .000
      [XIMP=.79:TIMP=.79]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .16:SLPI= .30:LGI= 120.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00250------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-01A-S      40.82    3.600 No_date   28:44   36.91  n/a     .000
                    +     1.0 02:KB-01B-S      31.10    1.585 No_date   27:51   40.77  n/a     .000
                    +     1.0 02:KB-01C-S      13.78    1.350 No_date   28:37   42.09  n/a     .000
                    +     1.0 02:KB-03-S       84.78    5.270 No_date   29:11   41.33  n/a     .000
                    +     1.0 02:KB-04-S        6.95     .503 No_date   27:43   78.64  n/a     .000
                    +     1.0 02:KB-05          5.19    1.406 No_date   28:00   82.69  n/a     .000
                    +     1.0 02:KB-06-S       12.93    2.262 No_date   27:51   79.89  n/a     .000
                    +     1.0 02:KB-11-S        4.03     .577 No_date   27:51   67.60  n/a     .000
                    +     1.0 02:KB-15          2.15     .548 No_date   28:00   75.20  n/a     .000
                    +     1.0 02:S1             4.99    1.426 No_date   28:00   82.69  n/a     .000
                 SUM=     1.0 01:KB-P1        206.72   18.527 No_date   28:00   46.99  n/a     .000
R0100:C00251------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:KB-P1        206.72   18.527 No_date   28:00   46.99  n/a     .000
                 out <=   1.0 01:KB-P1R       196.58   12.438 No_date   28:00   46.99  n/a     .000
            overflow <=   1.0 03:KB-P1ovf      10.14    6.062 No_date   28:00   46.99  n/a     .000
     {MxStoUsed=.7330E+00  m3, TotOvfVol=.4763E+00  m3, N-Ovf=    2, TotDurOvf=    1.hrs}
R0100:C00252------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-P1R       196.58   12.438 No_date   28:00   46.99  n/a     .000
                    +     1.0 02:KB-P1ovf      10.14    6.062 No_date   28:00   46.99  n/a     .000
                 SUM=     1.0 01:KB-Pond1     206.72   18.500 No_date   28:00   46.99  n/a     .000
R0100:C00253------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:KB-Pond1     206.72   18.500 No_date   28:00   46.99  n/a     .000
      fname :KB-Pond1.0100
      remark:Total Flows at KB first pond
R0100:C00254------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-07         10.86    2.908 No_date   28:00   79.06 .893     .000
      [XIMP=.86:TIMP=.86]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI=2.00:LGI= 269.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00255------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-07         10.86    2.908 No_date   28:00   79.06  n/a     .000
     Major System   /     1.0 02:KB-07-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-07-MN      10.86    2.094 No_date   27:53   79.26  n/a     .000
      {MjSysSto=.3334E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00256------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-07-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:KB-07-MN      10.86    2.094 No_date   27:53   79.26  n/a     .000
                 SUM=     1.0 01:KB-07-S       10.86    2.094 No_date   27:53   79.26  n/a     .000
R0100:C00257------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-08          6.61    1.609 No_date   28:00   65.36 .738     .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI=2.00:LGI= 210.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00258------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-08          6.61    1.609 No_date   28:00   65.36  n/a     .000
     Major System   /     1.0 02:KB-08-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-08-MN       6.61    1.058 No_date   27:52   65.50  n/a     .000
      {MjSysSto=.2397E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00259------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-08-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:KB-08-MN       6.61    1.058 No_date   27:52   65.50  n/a     .000
                 SUM=     1.0 01:KB-08-S        6.61    1.058 No_date   27:52   65.50  n/a     .000
R0100:C00260------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-09          2.60     .727 No_date   28:00   78.38 .885     .000
      [XIMP=.86:TIMP=.86]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=2.00:LGI= 132.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00261------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-10_1        2.37     .663 No_date   28:00   78.39 .885     .000
      [XIMP=.86:TIMP=.86]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=2.00:LGI= 126.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00262------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-10_2        1.14     .322 No_date   28:00   78.39 .885     .000
      [XIMP=.86:TIMP=.86]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=2.00:LGI=  87.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00263------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-12          4.86    1.294 No_date   28:00   74.45 .841     .000
      [XIMP=.79:TIMP=.79]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.10:SLPI=2.00:LGI= 180.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00264------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-12          4.86    1.294 No_date   28:00   74.45  n/a     .000
     Major System   /     1.0 02:KB-12-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-12-MN       4.86     .867 No_date   28:11   74.79  n/a     .000
      {MjSysSto=.1873E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00265------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-12-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:KB-12-MN       4.86     .867 No_date   28:11   74.79  n/a     .000
                 SUM=     1.0 01:KB-12-S        4.86     .867 No_date   28:11   74.79  n/a     .000
R0100:C00266------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-13         10.19    2.407 No_date   28:00   65.36 .738     .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI=2.00:LGI= 261.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00267------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-13         10.19    2.407 No_date   28:00   65.36  n/a     .000
     Major System   /     1.0 02:KB-13-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-13-MN      10.19    1.722 No_date   27:54   65.63  n/a     .000
      {MjSysSto=.2806E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00268------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-13-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:KB-13-MN      10.19    1.722 No_date   27:54   65.63  n/a     .000
                 SUM=     1.0 01:KB-13-S       10.19    1.722 No_date   27:54   65.63  n/a     .000
R0100:C00269------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-14          5.47    1.338 No_date   28:00   65.36 .738     .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .79:SLPI=2.00:LGI= 191.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00270------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:KB-14          5.47    1.338 No_date   28:00   65.36  n/a     .000
     Major System   /     1.0 02:KB-14-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:KB-14-MN       5.47     .873 No_date   27:52   65.48  n/a     .000
      {MjSysSto=.2041E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00271------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-14-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:KB-14-MN       5.47     .873 No_date   27:52   65.48  n/a     .000
                 SUM=     1.0 01:KB-14-S        5.47     .873 No_date   27:52   65.48  n/a     .000
R0100:C00272------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-16_2        3.42     .803 No_date   28:01   70.16 .792     .000
      [XIMP=.71:TIMP=.71]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .16:SLPI= .30:LGI= 151.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00273------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-Pond1     206.72   18.500 No_date   28:00   46.99  n/a     .000
                    +     1.0 02:KB-07-S       10.86    2.094 No_date   27:53   79.26  n/a     .000
                    +     1.0 02:KB-08-S        6.61    1.058 No_date   27:52   65.50  n/a     .000
                    +     1.0 02:KB-09          2.60     .727 No_date   28:00   78.38  n/a     .000
                    +     1.0 02:KB-10_1        2.37     .663 No_date   28:00   78.38  n/a     .000
                    +     1.0 02:KB-10_2        1.14     .322 No_date   28:00   78.39  n/a     .000
                    +     1.0 02:KB-12-S        4.86     .867 No_date   28:11   74.79  n/a     .000
                    +     1.0 02:KB-13-S       10.19    1.722 No_date   27:54   65.63  n/a     .000
                    +     1.0 02:KB-14-S        5.47     .873 No_date   27:52   65.48  n/a     .000
                    +     1.0 02:KB-16_2        3.42     .803 No_date   28:01   70.16  n/a     .000
                 SUM=     1.0 01:KB-P2        254.24   27.626 No_date   28:00   51.59  n/a     .000
R0100:C00274------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:KB-P2        254.24   27.626 No_date   28:00   51.59  n/a     .000
                 out <=   1.0 01:KB-P2R       249.74   17.634 No_date   28:06   51.59  n/a     .000
            overflow <=   1.0 03:KB-P2ovf       4.50    6.910 No_date   28:06   51.59  n/a     .000
     {MxStoUsed=.1110E+01  m3, TotOvfVol=.2320E+00  m3, N-Ovf=    2, TotDurOvf=    0.hrs}
R0100:C00275------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-P2R       249.74   17.634 No_date   28:06   51.59  n/a     .000
                    +     1.0 02:KB-P2ovf       4.50    6.910 No_date   28:06   51.59  n/a     .000
                 SUM=     1.0 01:KB-Pond2     254.24   24.544 No_date   28:06   51.59  n/a     .000
R0100:C00276------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:KB-Pond2     254.24   24.544 No_date   28:06   51.59  n/a     .000
      fname :KB-Pond2.0100
      remark:Total Flows at KB second pond
R0100:C00277------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:KB-16_1        2.80     .686 No_date   28:00   72.68 .821     .000
      [XIMP=.75:TIMP=.75]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp=  .16:SLPI= .30:LGI= 137.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00278------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-Pond2     254.24   24.544 No_date   28:06   51.59  n/a     .000
                    +     1.0 02:KB-16_1        2.80     .686 No_date   28:00   72.68  n/a     .000
                 SUM=     1.0 01:KB-P3        257.04   24.930 No_date   28:06   51.82  n/a     .000
R0100:C00279------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:KB-P3        257.04   24.930 No_date   28:06   51.82  n/a     .000
                 out <=   1.0 01:KB-P3R         8.56     .051 No_date   17:08   51.81  n/a     .000
            overflow <=   1.0 03:KB-P3ovf     248.48   24.659 No_date   28:07   51.82  n/a     .000
     {MxStoUsed=.1991E-02  m3, TotOvfVol=.1288E+02  m3, N-Ovf=    1, TotDurOvf=   23.hrs}
R0100:C00280------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-P3R         8.56     .051 No_date   17:08   51.81  n/a     .000
                    +     1.0 02:KB-P3ovf     248.48   24.659 No_date   28:07   51.82  n/a     .000
                 SUM=     1.0 01:KB-Pond3     257.04   24.710 No_date   28:07   51.82  n/a     .000
R0100:C00281------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:KB-Pond3     257.04   24.710 No_date   28:07   51.82  n/a     .000
      fname :KB-Pond3.0100
      remark:Total Flows at KB third pond
#*****************************************************************************
#    EXISTING / PROPOSED Subcatchments (Kennedy-Burnett SWM Facility (118080), SWM Modeling Approach, NOVATECH Report Ju
#    - TO FRASER-CLARKE DRAIN
#*****************************************************************************
R0100:C00282------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:FC-01          8.03    1.646 No_date   28:01   54.40 .614     .000
      [XIMP=.47:TIMP=.47]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 231.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00283------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:FC-01          8.03    1.646 No_date   28:01   54.40  n/a     .000
     Major System   /     1.0 02:FC-01-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:FC-01-MN       8.03     .756 No_date   27:49   54.46  n/a     .000
      {MjSysSto=.6274E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00284------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:FC-01-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:FC-01-MN       8.03     .756 No_date   27:49   54.46  n/a     .000
                 SUM=     1.0 01:FC-01-S        8.03     .756 No_date   27:49   54.46  n/a     .000
R0100:C00285------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:FC-02         16.05    4.197 No_date   28:00   82.69 .934     .000
      [XIMP=.93:TIMP=.93]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 327.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00286------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:FC-02         16.05    4.197 No_date   28:00   82.69  n/a     .000
     Major System   /     1.0 02:FC-02-MJ        .45    1.768 No_date   28:05   82.69  n/a     .000
     Minor System   \     1.0 03:FC-02-MN      15.60    1.159 No_date   27:43   82.88  n/a     .000
      {MjSysSto=.2385E+04, TotOvfVol=.3716E+03, N-Ovf=    1, TotDurOvf=    0.hrs}
R0100:C00287------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:FC-02-MJ        .45    1.768 No_date   28:05   82.69  n/a     .000
                    +     1.0 02:FC-02-MN      15.60    1.159 No_date   27:43   82.88  n/a     .000
                 SUM=     1.0 01:FC-02-S       16.05    2.927 No_date   28:05   82.87  n/a     .000
R0100:C00288------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:FC-03          7.37    1.717 No_date   28:00   64.86 .732     .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 222.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00289------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:FC-03          7.37    1.717 No_date   28:00   64.86  n/a     .000
     Major System   /     1.0 02:FC-03-MJ        .34     .661 No_date   28:06   64.86  n/a     .000
     Minor System   \     1.0 03:FC-03-MN       7.03     .358 No_date   27:41   64.90  n/a     .000
      {MjSysSto=.1131E+04, TotOvfVol=.2188E+03, N-Ovf=    1, TotDurOvf=    0.hrs}
R0100:C00290------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:FC-03-MJ        .34     .661 No_date   28:06   64.86  n/a     .000
                    +     1.0 02:FC-03-MN       7.03     .358 No_date   27:41   64.90  n/a     .000
                 SUM=     1.0 01:FC-03-S        7.37    1.019 No_date   28:06   64.90  n/a     .000
R0100:C00291------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:FC-04         12.87    2.884 No_date   28:01   64.86 .732     .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 293.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00292------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:FC-04         12.87    2.884 No_date   28:01   64.86  n/a     .000
     Major System   /     1.0 02:FC-04-MJ        .44     .978 No_date   28:07   64.86  n/a     .000
     Minor System   \     1.0 03:FC-04-MN      12.43     .741 No_date   27:43   65.10  n/a     .000
      {MjSysSto=.1794E+04, TotOvfVol=.2828E+03, N-Ovf=    1, TotDurOvf=    0.hrs}
R0100:C00293------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:FC-04-MJ        .44     .978 No_date   28:07   64.86  n/a     .000
                    +     1.0 02:FC-04-MN      12.43     .741 No_date   27:43   65.10  n/a     .000
                 SUM=     1.0 01:FC-04-S       12.87    1.719 No_date   28:07   65.09  n/a     .000
#*****************************************************************************
#    PROPOSED Subcatchments (Kennedy-Burnett SWM Facility (118080), SWM Modeling Approach, NOVATECH Report June, 2020)
#    - TO JOCK RIVER
#*****************************************************************************
R0100:C00294------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:JR-01          8.24    1.891 No_date   28:00   64.86 .732     .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 234.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00295------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:JR-01          8.24    1.891 No_date   28:00   64.86  n/a     .000
     Major System   /     1.0 02:JR-01-MJ        .20     .471 No_date   28:06   64.86  n/a     .000
     Minor System   \     1.0 03:JR-01-MN       8.04     .563 No_date   27:44   64.95  n/a     .000
      {MjSysSto=.1040E+04, TotOvfVol=.1267E+03, N-Ovf=    1, TotDurOvf=    0.hrs}
R0100:C00296------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:JR-01-MJ        .20     .471 No_date   28:06   64.86  n/a     .000
                    +     1.0 02:JR-01-MN       8.04     .563 No_date   27:44   64.95  n/a     .000
                 SUM=     1.0 01:JR-01-S        8.24    1.034 No_date   28:06   64.95  n/a     .000
R0100:C00297------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:JR-02          1.59     .393 No_date   28:00   64.86 .732     .000
      [XIMP=.64:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 103.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
R0100:C00298------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:JR-02          1.59     .393 No_date   28:00   64.85  n/a     .000
     Major System   /     1.0 02:JR-02-MJ        .02     .087 No_date   28:03   64.85  n/a     .000
     Minor System   \     1.0 03:JR-02-MN       1.57     .153 No_date   27:44   65.24  n/a     .000
      {MjSysSto=.1530E+03, TotOvfVol=.1375E+02, N-Ovf=    1, TotDurOvf=    0.hrs}
R0100:C00299------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:JR-02-MJ        .02     .087 No_date   28:03   64.85  n/a     .000
                    +     1.0 02:JR-02-MN       1.57     .153 No_date   27:44   65.24  n/a     .000
                 SUM=     1.0 01:JR-02-S        1.59     .240 No_date   28:03   65.23  n/a     .000
#*****************************************************************************
#    Catchment FRASER
#    - To Fraser-Clarke drain (north of the Jock)
#    - Developed land with assumed 43% imp.
#    - 2020-12-17 Change Fraser area to be 35.1 as measured from QGIS
#    - 2020-12-17 All Fraser is undeveloped (Nashyd)
#*****************************************************************************
R0100:C00300------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:FRASER-DRN    13.65     .837 No_date   28:21   45.95 .519     .000
      [CN= 77.0: N= 3.00: Tp=  .43]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0100:C00301------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:FRASER-D      21.61    4.106 No_date   28:01   69.71 .787     .000
      [XIMP=.58:TIMP=.58]
      [LOSS= 2 :CN= 80.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 380.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 26.32: SMAX=175.50: SK= .010]
R0100:C00302------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:FRASER-D      21.61    4.106 No_date   28:01   69.71  n/a     .000
     Major System   /     1.0 02:FRASER-J        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:FRASER-N      21.61    2.281 No_date   27:51   69.88  n/a     .000
      {MjSysSto=.1163E+04, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00303------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:FRASER-J        .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:FRASER-N      21.61    2.281 No_date   27:51   69.88  n/a     .000
                 SUM=     1.0 01:FRASER-S      21.61    2.281 No_date   27:51   69.88  n/a     .000
R0100:C00304------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:KB-Pond3     257.04   24.710 No_date   28:07   51.82  n/a     .000
                    +     1.0 02:S-1-B         55.36    3.260 No_date   28:23   45.95  n/a     .000
                    +     1.0 02:FRASER-DRN    13.65     .837 No_date   28:21   45.95  n/a     .000
                    +     1.0 02:FRASER-S      21.61    2.281 No_date   27:51   69.88  n/a     .000
                    +     1.0 02:N_KB       54279.40  144.071 No_date   36:49   39.18  n/a     .000
```

```
                   +     1.0 02:FC-01-S        8.03     .756 No_date   27:49   54.46  n/a     .000
                   +     1.0 02:FC-02-S       16.05    2.927 No_date   28:05   82.87  n/a     .000
                   +     1.0 02:FC-03-S        7.37    1.019 No_date   28:06   64.90  n/a     .000
                SUM=     1.0 01:4241       54658.51  144.701 No_date   36:48   39.28  n/a     .000
R0100:C00305------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD             1.0 01:4241       54658.51  144.701 No_date   36:48   39.28  n/a     .000
      fname :4241.0100
      remark:Total Flows at Ken-Burnett Outlet
# Hydrograph from Node Ken-Burnett to station 3633
# Channel X-Section obtained from RVCA Hydraulic Model - Station 4241
#
R0100:C00306------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->   1.0 02:4241       54658.51  144.701 No_date   36:48   39.28  n/a     .000
 *   [RDT= 1.00] out<-   1.0 01:4241-out   54658.51  144.744 No_date   36:44   39.28  n/a     .000
      [L/S/n=  294./ .109/.035]
      {Vmax= 1.396:Dmax= 2.598}
R0100:C00307------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              1.0 02:4241-out   54658.51  144.744 No_date   36:44   39.28  n/a     .000
                   +     1.0 02:FC-04-S       12.87    1.719 No_date   28:07   65.09  n/a     .000
                   +     1.0 02:JR-01-S        8.24    1.034 No_date   28:06   64.95  n/a     .000
                   +     1.0 02:JR-02-S        1.59     .240 No_date   28:03   65.23  n/a     .000
                SUM=     1.0 01:SN_KB      54681.20  144.787 No_date   36:44   39.29  n/a     .000
R0100:C00308------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD             1.0 01:SN_KB      54681.20  144.787 No_date   36:44   39.29  n/a     .000
      fname :SN_KB.0100
      remark:Total Flows before Station 3633
# Hydrograph from Station 3633 to Node Todd
# Channel X-Section obtained from RVCA Hydraulic Model - Station 3633
# JFSA 2021-02-26 change the channel length (at station 3633) from 650m to 608m and change the slope from 0.0498% to 0.2
#
R0100:C00309------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->   1.0 02:SN_KB      54681.20  144.787 No_date   36:44   39.29  n/a     .000
     [RDT= 1.00] out<-   1.0 01:N_TO       54681.20  144.732 No_date   36:50   39.29  n/a     .000
      [L/S/n=  608./ .247/.035]
      {Vmax= 1.906:Dmax= 1.945}
#*******************************************************************************
#    Catchment Greenbank
#    - To Greenbank Drain (south of the Jock)
#    - JFSA 2021-01-18 add Greenbank pond as per JFSA, P598(06)-15, June 2016
#    - JFSA 2021-01-19 update area from 37.479 ha to 36.6 ha based on GIS measurements
#*******************************************************************************
R0100:C00310------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:Greenbank     36.60    7.069 No_date   28:01   71.80 .811     .000
      [XIMP=.64:TIMP=.68]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 494.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0100:C00311------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:Greenbank     36.60    7.069 No_date   28:01   71.80  n/a     .000
                 out <=   1.0 01:GreenB_MN     36.60    5.350 No_date   28:07   71.80  n/a     .000
            overflow <=   1.0 03:GreenB_MJ       .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.9351E+00  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00312------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD              1.0 02:N_TO       54681.20  144.732 No_date   36:50   39.29  n/a     .000
                   +     1.0 02:GreenB_MJ       .00     .000 No_date    0:00     .00  n/a     .000
                   +     1.0 02:GreenB_MN     36.60    5.350 No_date   28:07   71.80  n/a     .000
                SUM=     1.0 01:GreenB     54717.80  144.894 No_date   36:50   39.32  n/a     .000
R0100:C00313------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD             1.0 01:GreenB     54717.80  144.894 No_date   36:50   39.32  n/a     .000
      fname :GreenB.0100
      remark:Total Flows at Greenbank Drain
#*******************************************************************************
#    Catchment TODD
#    - To Todd Drain (south of the Jock)
#    - Subdivision with 43% imp. as per Barrhaven South MSS
#    - 2020-11-30 increase imp. based on P598(04)-11
#    - 2020-11-30 update TODD Tributary Drainage Area to  = 146.015 ha based on P598(04)-11
#    - 2020-11-30 split TODD Drainage Area to MAJOR, MINOR, POND and ALL
#*******************************************************************************
#    - JFSA 2021-01-19 add "TODD_MN1" as part of Clarke("W_CLAR_MJ") and remove it from Todd
R0100:C00314------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:TODD_MN2       2.10     .428 No_date   28:00   66.78 .754     .000
      [XIMP=.53:TIMP=.57]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 118.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0100:C00315------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:TODD_MN3        .12     .025 No_date   28:00   66.78 .754     .000
      [XIMP=.53:TIMP=.57]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI=  28.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0100:C00316------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:TODD_MJ       30.23    5.210 No_date   28:02   68.65 .775     .000
      [XIMP=.52:TIMP=.64]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 449.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0100:C00317------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:TODD_ALL     112.91   17.286 No_date   28:04   66.60 .752     .000
      [XIMP=.52:TIMP=.57]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 868.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0100:C00318------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:TODD_P         3.06     .669 No_date   28:00   70.28 .794     .000
      [XIMP=.63:TIMP=.63]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 143.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
# 5-Year + 12% Capture
R0100:C00319------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:TODD_MJ       30.23    5.210 No_date   28:02   68.65  n/a     .000
                 out <=   1.0 01:TODD_MJn      28.64    3.314 No_date   27:54   68.65  n/a     .000
            overflow <=   1.0 03:TODD_MJj       1.59    1.889 No_date   28:02   68.65  n/a     .000
     {MxStoUsed=.1512E-03  m3, TotOvfVol=.1094E+00  m3, N-Ovf=    1, TotDurOvf=    0.hrs}
# 5-Year + 12% Capture
R0100:C00320------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:TODD_MN2       2.10     .428 No_date   28:00   66.78  n/a     .000
                 out <=   1.0 01:TODD_MN2n      1.99     .268 No_date   27:52   66.78  n/a     .000
            overflow <=   1.0 03:TODD_MN2j       .11     .155 No_date   28:00   66.78  n/a     .000
     {MxStoUsed=.1204E-03  m3, TotOvfVol=.7282E-02  m3, N-Ovf=    1, TotDurOvf=    0.hrs}
R0100:C00321------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:TODD_MN3        .12     .025 No_date   28:00   66.78  n/a     .000
                 out <=   1.0 01:TODD_MN3n       .11     .016 No_date   27:52   66.78  n/a     .000
            overflow <=   1.0 03:TODD_MN3j       .01     .009 No_date   28:00   66.78  n/a     .000
     {MxStoUsed=.9808E-04  m3, TotOvfVol=.3933E-03  m3, N-Ovf=    1, TotDurOvf=    0.hrs}
R0100:C00322------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A2            25.50    3.884 No_date   28:03   62.46 .705     .000
      [XIMP=.42:TIMP=.52]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 566.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0100:C00323------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A2            25.50    3.884 No_date   28:03   62.46  n/a     .000
     Major System   /     1.0 02:A2-MJ          1.43    2.026 No_date   28:04   62.46  n/a     .000
     Minor System   \     1.0 03:A2-MN         24.07    1.818 No_date   27:50   62.71  n/a     .000
      {MjSysSto=.9240E+03, TotOvfVol=.8908E+03, N-Ovf=    1, TotDurOvf=    0.hrs}
R0100:C00324------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:TODD_MN2n      1.99     .268 No_date   27:52   66.78  n/a     .000
                    +     1.0 02:TODD_MN3n       .11     .016 No_date   27:52   66.78  n/a     .000
                    +     1.0 02:TODD_MJj       1.59    1.889 No_date   28:02   68.65  n/a     .000
                    +     1.0 02:TODD_P         3.06     .669 No_date   28:00   70.28  n/a     .000
                    +     1.0 02:TODD_ALL     112.91   17.286 No_date   28:04   66.60  n/a     .000
                    +     1.0 02:W_CLAR_MJn     1.69     .213 No_date   27:52   66.22  n/a     .000
                 SUM=     1.0 01:TODD         121.35   20.000 No_date   28:03   66.72  n/a     .000
R0100:C00325------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:TODD         121.35   20.000 No_date   28:03   66.72  n/a     .000
      fname :TODD.0100
      remark:Total Flows at Todd Drain
#*******************************************************************************
#    Todd Pond 3
#    - Rating curve obtained from Barrhaven South MSS modeling
#    - stantec 2007, Tributary Drainage Area to MSS Pond 3 = 193 ha
#*******************************************************************************
R0100:C00326------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:TODD         121.35   20.000 No_date   28:03   66.72  n/a     .000
                 out <=   1.0 01:MS_P3        121.35   15.844 No_date   28:09   66.71  n/a     .000
            overflow <=   1.0 03:P3-OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.2834E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00327------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:GreenB     54717.80  144.894 No_date   36:50   39.32  n/a     .000
                    +     1.0 02:MS_P3        121.35   15.844 No_date   28:09   66.71  n/a     .000
                    +     1.0 02:P3-OVF          .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:TODD_MN2j       .11     .155 No_date   28:00   66.78  n/a     .000
                    +     1.0 02:A2-MJ          1.43    2.026 No_date   28:04   62.46  n/a     .000
                 SUM=     1.0 01:SN_TO      54840.69  145.243 No_date   36:49   39.38  n/a     .000
R0100:C00328------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_TO      54840.69  145.243 No_date   36:49   39.38  n/a     .000
      fname :SN_TO.0100
      remark:Total Flows at Todd Drain
#
# Hydrograph from Todd Drain routed to Corrigan Drain
# Channel X-Section obtained from RVCA Hydraulic Model - Station 2462
# 2021-02-19 Change the slope from 0.033 % (as per Stantec Report 2007) to 0.05 % so the model will be more stable and g
R0100:C00329------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_TO      54840.69  145.243 No_date   36:49   39.38  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:N_TO       54840.69  145.165 No_date   36:58   39.38  n/a     .000
      [L/S/n=  280./ .050/.045]
      {Vmax=  .881:Dmax= 3.684}
R0100:C00330------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:N_TO       54840.69  145.165 No_date   36:58   39.38  n/a     .000
      fname :N_TO.0100
      remark:Total inflows at Station 2462
#*******************************************************************************
#    Catchment CORRIG
#    - To Corrigan Drain (south of the Jock)
#    - Primarily Developed (medium density)
#    - JFSA JAN 2021, add Corrigan subcatchments as per IBI, July 2008
#*******************************************************************************
R0100:C00331------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:corr1         15.87    3.185 No_date   28:01   70.28 .794     .000
      [XIMP=.63:TIMP=.63]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 325.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
R0100:C00332------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:corr1         15.87    3.185 No_date   28:01   70.28  n/a     .000
     Major System   /     1.0 02:corr1-MJ        .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:corr1-MN      15.87    1.818 No_date   28:25   70.70  n/a     .000
      {MjSysSto=.7879E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00333------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:corr2         12.47     .388 No_date   29:10   45.95 .519     .000
      [CN= 77.0: N= 3.00: Tp= 1.10]
      [IaREC= 4.00: SMIN= 31.15: SMAX=207.66: SK= .010]
      [InterEventTime=  12.00]
R0100:C00334------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A1-Corrig     15.75    2.624 No_date   28:01   62.46 .705     .000
      [XIMP=.42:TIMP=.52]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 324.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0100:C00335------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A1-Corrig     15.75    2.624 No_date   28:01   62.46  n/a     .000
     Major System   /     1.0 02:A1-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A1-MN         15.75    1.818 No_date   27:55   62.48  n/a     .000
      {MjSysSto=.3859E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00336------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:B1             2.77     .143 No_date   28:09   29.03 .328     .000
      [CN= 56.0: N= 3.00: Tp=  .23]
      [IaREC= 4.00: SMIN= 79.69: SMAX=531.24: SK= .010]
      [InterEventTime=  12.00]
R0100:C00337------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A4             1.27     .266 No_date   28:00   70.58 .797     .000
      [XIMP=.65:TIMP=.65]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 253.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0100:C00338------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A4             1.27     .266 No_date   28:00   70.58  n/a     .000
     Major System   /     1.0 02:A4-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A4-MN          1.27     .266 No_date   28:00   70.58  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00339------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:A1-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:A1-MN         15.75    1.818 No_date   27:55   62.48  n/a     .000
                    +     1.0 02:corr1-MJ        .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:corr1-MN      15.87    1.818 No_date   28:25   70.70  n/a     .000
                    +     1.0 02:corr2         12.47     .388 No_date   29:10   45.95  n/a     .000
                    +     1.0 02:B1             2.77     .143 No_date   28:09   29.03  n/a     .000
                    +     1.0 02:A4-MN          1.27     .266 No_date   28:00   70.58  n/a     .000
                 SUM=     1.0 01:MH101         48.13    4.085 No_date   28:02   59.20  n/a     .000
R0100:C00340------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH101         48.13    4.085 No_date   28:02   59.20  n/a     .000
      fname :MH101.0100
      remark:Total Flows at MH101
R0100:C00341------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH101         48.13    4.085 No_date   28:02   59.20  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:101-102       48.13    4.065 No_date   28:03   59.20  n/a     .000
      [L/S/n=  368./ .540/.013]
      {Vmax= 3.154:Dmax= 1.125}
      [Din= 1.05:Dused= 1.37}
R0100:C00342------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:A2-MN         24.07    1.818 No_date   27:50   62.71  n/a     .000
                    +     1.0 02:101-102       48.13    4.065 No_date   28:03   59.20  n/a     .000
                 SUM=     1.0 01:MH102         72.20    5.883 No_date   28:03   60.37  n/a     .000
R0100:C00343------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH102         72.20    5.883 No_date   28:03   60.37  n/a     .000
      fname :MH102.0100
      remark:Total Flows at MH102
R0100:C00344------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A5             1.60     .346 No_date   28:01   73.40 .829     .000
      [XIMP=.71:TIMP=.71]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 300.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0100:C00345------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:A4-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:A5             1.60     .346 No_date   28:01   73.40  n/a     .000
                 SUM=     1.0 01:A5T            1.60     .346 No_date   28:01   73.40  n/a     .000
R0100:C00346------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A5T            1.60     .346 No_date   28:01   73.40  n/a     .000
     Major System   /     1.0 02:A5-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A5-MN          1.60     .346 No_date   28:01   73.40  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00347------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH102         72.20    5.883 No_date   28:03   60.37  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:102-103       72.20    5.831 No_date   28:12   60.37  n/a     .000
      [L/S/n=  504./ .280/.013]
      {Vmax= 2.701:Dmax= 1.459}
      [Din= 1.50:Dused= 1.78}
R0100:C00348------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:102-103       72.20    5.831 No_date   28:12   60.37  n/a     .000
                    +     1.0 02:A5-MN          1.60     .346 No_date   28:01   73.40  n/a     .000
                 SUM=     1.0 01:MH103         73.80    6.079 No_date   28:04   60.65  n/a     .000
R0100:C00349------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH103         73.80    6.079 No_date   28:04   60.65  n/a     .000
      fname :MH103.0100
      remark:Total Flows at MH103
R0100:C00350------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH103         73.80    6.079 No_date   28:04   60.65  n/a     .000
     [RDT= 1.00] out<-    1.0 01:103-104       73.80    6.014 No_date   28:05   60.65  n/a     .000
      [L/S/n=  438./ .460/.013]
      {Vmax= 3.295:Dmax= 1.330}
      [Din= 1.65:Dused= 1.65}
R0100:C00351------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A6             1.56     .339 No_date   28:00   73.40 .829     .000
      [XIMP=.71:TIMP=.71]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 280.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0100:C00352------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:A5-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:A6             1.56     .339 No_date   28:00   73.40  n/a     .000
                 SUM=     1.0 01:A6T            1.56     .339 No_date   28:00   73.40  n/a     .000
R0100:C00353------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A6T            1.56     .339 No_date   28:00   73.40  n/a     .000
     Major System   /     1.0 02:A6-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A6-MN          1.56     .339 No_date   28:00   73.40  n/a     .000
      {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00354------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:A6-MN          1.56     .339 No_date   28:00   73.40  n/a     .000
                    +     1.0 02:103-104       73.80    6.014 No_date   28:05   60.65  n/a     .000
                    +     1.0 02:TODD_MJn      28.64    3.314 No_date   27:54   68.65  n/a     .000
                 SUM=     1.0 01:MH104        104.00    9.601 No_date   28:03   63.04  n/a     .000
R0100:C00355------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH104        104.00    9.601 No_date   28:03   63.04  n/a     .000
      fname :MH104.0100
      remark:Total Flows at MH104
R0100:C00356------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:B2            12.31    2.012 No_date   28:02   62.88 .710     .000
      [XIMP=.41:TIMP=.54]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 417.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0100:C00357------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:B2            12.31    2.012 No_date   28:02   62.88  n/a     .000
     Major System   /     1.0 02:B2-MJ           .36     .820 No_date   28:05   62.88  n/a     .000
     Minor System   \     1.0 03:B2-MN         11.95    1.029 No_date   27:51   62.91  n/a     .000
      {MjSysSto=.5080E+03, TotOvfVol=.2245E+03, N-Ovf=    1, TotDurOvf=    0.hrs}
R0100:C00358------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:B2-MN         11.95    1.029 No_date   27:51   62.91  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:315-333       11.95    1.029 No_date   28:35   62.91  n/a     .000
      [L/S/n=  254./ .100/.013]
      {Vmax= 1.220:Dmax=  .838}
      [Din= 1.20:Dused= 1.20}
R0100:C00359------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:B3             5.59     .930 No_date   28:01   62.88 .710     .000
      [XIMP=.41:TIMP=.54]
      [LOSS= 2 :CN= 75.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 345.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 33.81: SMAX=225.43: SK= .010]
R0100:C00360------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:B3             5.59     .930 No_date   28:01   62.88  n/a     .000
     Major System   /     1.0 02:B3-MJ           .19     .402 No_date   28:04   62.88  n/a     .000
     Minor System   \     1.0 03:B3-MN          5.40     .459 No_date   27:50   63.05  n/a     .000
      {MjSysSto=.2270E+03, TotOvfVol=.1217E+03, N-Ovf=    1, TotDurOvf=    0.hrs}
R0100:C00361------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:B3-MN          5.40     .459 No_date   27:50   63.05  n/a     .000
                    +     1.0 02:315-333       11.95    1.029 No_date   28:35   62.91  n/a     .000
                 SUM=     1.0 01:MH333         17.35    1.488 No_date   28:35   62.96  n/a     .000
R0100:C00362------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH333         17.35    1.488 No_date   28:35   62.96  n/a     .000
      fname :MH333.0100
      remark:Total Flows at MH333
R0100:C00363------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
```

```
    ROUTE PIPE      ->    1.0 02:MH333         17.35    1.488 No_date   28:35   62.96  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:333-335       17.35    1.489 No_date   28:27   62.96  n/a     .000
       [L/S/n=  251./ .100/.013]
       {Vmax= 1.302:Dmax= 1.057}
       [Din= 1.20:Dused= 1.29}
R0100:C00364-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:333-335       17.35    1.489 No_date   28:27   62.96  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:335-338       17.35    1.481 No_date   28:35   62.96  n/a     .000
       [L/S/n=  185./ .100/.013]
       {Vmax= 1.302:Dmax= 1.057}
       [Din= 1.20:Dused= 1.29}
R0100:C00365-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:335-338       17.35    1.481 No_date   28:35   62.96  n/a     .000
     [RDT= 1.00] out<-    1.0 01:338-340       17.35    1.480 No_date   28:35   62.96  n/a     .000
       [L/S/n=  233./ .100/.013]
       {Vmax= 1.330:Dmax=  .981}
       [Din= 1.35:Dused= 1.35}
R0100:C00366-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:B4             7.60    1.252 No_date   28:02   62.88 .710     .000
       [XIMP=.41:TIMP=.54]
       [LOSS= 2 :CN= 75.0]
       [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 388.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 33.81: SMAX=225.43: SK= .010]
R0100:C00367-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:B4             7.60    1.252 No_date   28:02   62.88  n/a     .000
     Major System   /     1.0 02:B4-MJ           .17     .411 No_date   28:06   62.88  n/a     .000
     Minor System   \     1.0 03:B4-MN          7.43     .655 No_date   27:51   62.90  n/a     .000
       {MjSysSto=.3230E+03, TotOvfVol=.1079E+03, N-Ovf=    1, TotDurOvf=    0.hrs}
R0100:C00368-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:338-340       17.35    1.480 No_date   28:35   62.96  n/a     .000
                    +     1.0 02:B4-MN          7.43     .655 No_date   27:51   62.90  n/a     .000
                 SUM=     1.0 01:MH340         24.78    2.126 No_date   28:34   62.94  n/a     .000
R0100:C00369-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH340         24.78    2.126 No_date   28:34   62.94  n/a     .000
       fname :MH340.0100
       remark:Total Flows at MH340
R0100:C00370-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH340         24.78    2.126 No_date   28:34   62.94  n/a     .000
     [RDT= 1.00] out<-    1.0 01:340-104       24.78    2.116 No_date   28:21   62.94  n/a     .000
       [L/S/n=  240./ .150/.013]
       {Vmax= 1.726:Dmax=  .923}
       [Din= 1.65:Dused= 1.65}
R0100:C00371-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:340-104       24.78    2.116 No_date   28:21   62.94  n/a     .000
                    +     1.0 02:MH104        104.00    9.601 No_date   28:03   63.04  n/a     .000
                 SUM=     1.0 01:MH104T       128.78   11.560 No_date   28:04   63.02  n/a     .000
R0100:C00372-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH104T       128.78   11.560 No_date   28:04   63.02  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:104-105      128.78   11.359 No_date   28:10   63.02  n/a     .000
       [L/S/n=  380./ .100/.013]
       {Vmax= 2.115:Dmax= 2.014}
       {HGTH= 2.37:WDTH= 2.71}
R0100:C00373-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:B5             2.20     .437 No_date   28:00   66.83 .755     .000
       [XIMP=.57:TIMP=.57]
       [LOSS= 2 :CN= 75.0]
       [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 187.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 33.81: SMAX=225.43: SK= .010]
R0100:C00374-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:B5             2.20     .437 No_date   28:00   66.83  n/a     .000
     Major System   /     1.0 02:B5-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:B5-MN          2.20     .260 No_date   27:51   66.87  n/a     .000
       {MjSysSto=.9053E+02, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00375-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A8              .96     .219 No_date   28:00   73.40 .829     .000
       [XIMP=.71:TIMP=.71]
       [LOSS= 2 :CN= 75.0]
       [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 186.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 33.81: SMAX=225.43: SK= .010]
R0100:C00376-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:A6-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:A8              .96     .219 No_date   28:00   73.40  n/a     .000
                 SUM=     1.0 01:A8T             .96     .219 No_date   28:00   73.40  n/a     .000
R0100:C00377-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A8T             .96     .219 No_date   28:00   73.40  n/a     .000
     Major System   /     1.0 02:A8-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A8-MN           .96     .219 No_date   28:00   73.40  n/a     .000
       {MjSysSto=.0000E+00, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00378-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:104-105      128.78   11.359 No_date   28:10   63.02  n/a     .000
                    +     1.0 02:B5-MN          2.20     .260 No_date   27:51   66.87  n/a     .000
                    +     1.0 02:A8-MN           .96     .219 No_date   28:00   73.40  n/a     .000
                    +     1.0 02:TODD_MN3j       .01     .009 No_date   28:00   66.78  n/a     .000
                 SUM=     1.0 01:MH105        131.94   11.688 No_date   28:10   63.16  n/a     .000
R0100:C00379-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH105        131.94   11.688 No_date   28:10   63.16  n/a     .000
       fname :MH105.0100
       remark:Total Flows at MH105
R0100:C00380-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
 *  DIVERT HYD      ->    1.0 01:A8-MJ           .00     .000 No_date    0:00     .00  n/a     .000
           diverted <=    1.0 02:A8-MJ-JR        .00     .000 No_date    0:00     .00  n/a     .000
           diverted <=    1.0 03:A8-MJ-B6        .00     .000 No_date    0:00     .00  n/a     .000
R0100:C00381-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    DIVERT HYD      ->    1.0 01:MH105        131.94   11.688 No_date   28:10   63.16  n/a     .000
           diverted <=    1.0 02:MH105-JR      36.57    8.679 No_date   28:10   63.16  n/a     .000
           diverted <=    1.0 03:MH105-B6      95.37    3.009 No_date   28:10   63.16  n/a     .000
R0100:C00382-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:B7             7.19    1.283 No_date   28:01   62.88 .710     .000
       [XIMP=.41:TIMP=.54]
       [LOSS= 2 :CN= 75.0]
       [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 211.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 33.81: SMAX=225.43: SK= .010]
R0100:C00383-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:B4-MJ           .17     .411 No_date   28:06   62.88  n/a     .000
                    +     1.0 02:B7             7.19    1.283 No_date   28:01   62.88  n/a     .000
                 SUM=     1.0 01:B7-B4MJ        7.36    1.300 No_date   28:06   62.88  n/a     .000
R0100:C00384-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:B7-B4MJ        7.36    1.300 No_date   28:06   62.88  n/a     .000
     Major System   /     1.0 02:B7R-MJ          .36     .671 No_date   28:06   62.88  n/a     .000
     Minor System   \     1.0 03:B7R-MN         7.00     .629 No_date   28:31   62.97  n/a     .000
       {MjSysSto=.3110E+03, TotOvfVol=.2280E+03, N-Ovf=    1, TotDurOvf=    0.hrs}
R0100:C00385-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:B7R-MN         7.00     .629 No_date   28:31   62.97  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:360-106A       7.00     .629 No_date   28:31   62.97  n/a     .000
       [L/S/n=  167./ .100/.013]
       {Vmax= 1.089:Dmax=  .665}
       [Din= 1.05:Dused= 1.05}
R0100:C00386-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:B6             3.29     .602 No_date   28:00   62.88 .710     .000
       [XIMP=.41:TIMP=.54]
       [LOSS= 2 :CN= 75.0]
       [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 148.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 33.81: SMAX=225.43: SK= .010]
R0100:C00387-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:B6             3.29     .602 No_date   28:00   62.88  n/a     .000
     Major System   /     1.0 02:B6-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:B6-MN          3.29     .064 No_date   27:33   62.92  n/a     .000
       {MjSysSto=.7353E+03, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00388-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:EX-LAND       32.50    5.231 No_date   28:02   62.70 .708     .000
       [XIMP=.50:TIMP=.50]
       [LOSS= 2 :CN= 74.0]
       [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 465.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 36.67: SMAX=244.49: SK= .010]
R0100:C00389-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:EX-LAND       32.50    5.231 No_date   28:02   62.70  n/a     .000
     Major System   /     1.0 02:EX-LAND-MJ     1.77    2.874 No_date   28:03   62.70  n/a     .000
     Minor System   \     1.0 03:EX-LAND-MN    30.73    2.275 No_date   27:48   62.82  n/a     .000
       {MjSysSto=.1365E+04, TotOvfVol=.1111E+04, N-Ovf=    1, TotDurOvf=    0.hrs}
R0100:C00390-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:B7R-MJ          .36     .671 No_date   28:06   62.88  n/a     .000
                    +     1.0 02:EX-LAND-MJ     1.77    2.874 No_date   28:03   62.70  n/a     .000
                    +     1.0 02:B5-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:B6-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:B6-MN          3.29     .064 No_date   27:33   62.92  n/a     .000
                    +     1.0 02:A8-MJ-B6        .00     .000 No_date    0:00     .00  n/a     .000
                 SUM=     1.0 01:B6-B7ExMJ      5.42    3.483 No_date   28:03   62.85  n/a     .000
R0100:C00391-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:B6-B7ExMJ      5.42    3.483 No_date   28:03   62.85  n/a     .000
     Major System   /     1.0 02:B6R-MJ          .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:B6R-MN         5.42     .064 No_date   27:33   62.85  n/a     .000
       {MjSysSto=.1339E+04, TotOvfVol=.0000E+00, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00392-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH105-B6      95.37    3.009 No_date   28:10   63.16  n/a     .000
     [RDT= 1.00] out<-    1.0 01:105-106A      95.37    3.009 No_date   28:04   63.16  n/a     .000
       [L/S/n=  208./ .100/.013]
       {Vmax= 1.597:Dmax= 1.249}
       [Din= 1.80:Dused= 1.80}
R0100:C00393-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:360-106A       7.00     .629 No_date   28:31   62.97  n/a     .000
                    +     1.0 02:105-106A      95.37    3.009 No_date   28:04   63.16  n/a     .000
                    +     1.0 02:B6R-MN         5.42     .064 No_date   27:33   62.85  n/a     .000
                    +     1.0 02:B6R-MJ          .00     .000 No_date    0:00     .00  n/a     .000
                 SUM=     1.0 01:MH106A       107.80    3.702 No_date   28:10   63.13  n/a     .000
R0100:C00394-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH106A       107.80    3.702 No_date   28:10   63.13  n/a     .000
       fname :MH106A.0100
       remark:Total Flows at MH106A
R0100:C00395-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH106A       107.80    3.702 No_date   28:10   63.13  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:106A-106     107.80    3.757 No_date   28:13   63.13  n/a     .000
       [L/S/n=  190./ .100/.013]
       {Vmax= 1.635:Dmax= 1.487}
       [Din= 1.80:Dused= 1.81}
R0100:C00396-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A9             2.44     .539 No_date   28:00   73.40 .829     .000
       [XIMP=.71:TIMP=.71]
       [LOSS= 2 :CN= 75.0]
       [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 262.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 33.81: SMAX=225.43: SK= .010]
R0100:C00397-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A9             2.44     .539 No_date   28:00   73.40  n/a     .000
     Major System   /     1.0 02:A9-MJ           .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A9-MN          2.44     .539 No_date   28:00   73.40  n/a     .000
R0100:C00398-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:106A-106     107.80    3.757 No_date   28:13   63.13  n/a     .000
                    +     1.0 02:A9-MN          2.44     .539 No_date   28:00   73.40  n/a     .000
                 SUM=     1.0 01:MH106        110.24    4.227 No_date   28:00   63.36  n/a     .000
R0100:C00399-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH106        110.24    4.227 No_date   28:00   63.36  n/a     .000
       fname :MH106.0100
       remark:Total Flows at MH106
R0100:C00400-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH106        110.24    4.227 No_date   28:00   63.36  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:106-107      110.24    4.179 No_date   28:02   63.36  n/a     .000
       [L/S/n=  123./ .100/.013]
       {Vmax= 1.690:Dmax= 1.563}
       [Din= 1.80:Dused= 1.90}
R0100:C00401-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A10            4.14     .693 No_date   28:01   59.73 .674     .000
       [XIMP=.35:TIMP=.47]
       [LOSS= 2 :CN= 75.0]
       [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 183.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 33.81: SMAX=225.43: SK= .010]
R0100:C00402-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A10            4.14     .693 No_date   28:01   59.73  n/a     .000
     Major System   /     1.0 02:A10-MJ          .09     .218 No_date   28:05   59.73  n/a     .000
     Minor System   \     1.0 03:A10-MN         4.05     .310 No_date   27:48   60.02  n/a     .000
       {MjSysSto=.2280E+03, TotOvfVol=.5334E+02, N-Ovf=    1, TotDurOvf=    0.hrs}
R0100:C00403-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A11           10.61    1.941 No_date   28:01   67.38 .761     .000
       [XIMP=.53:TIMP=.62]
       [LOSS= 2 :CN= 75.0]
       [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 379.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 33.81: SMAX=225.43: SK= .010]
R0100:C00404-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A11           10.61    1.941 No_date   28:01   67.38  n/a     .000
     Major System   /     1.0 02:A11-MJ          .16     .564 No_date   28:06   67.38  n/a     .000
     Minor System   \     1.0 03:A11-MN        10.45     .993 No_date   28:34   67.69  n/a     .000
       {MjSysSto=.5560E+03, TotOvfVol=.1090E+03, N-Ovf=    1, TotDurOvf=    0.hrs}
R0100:C00405-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:106-107      110.24    4.179 No_date   28:02   63.36  n/a     .000
                    +     1.0 02:A10-MN         4.05     .310 No_date   27:48   60.02  n/a     .000
                    +     1.0 02:A11-MN        10.45     .993 No_date   28:34   67.69  n/a     .000
                 SUM=     1.0 01:MH107        124.74    5.482 No_date   28:02   63.62  n/a     .000
R0100:C00406-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH107        124.74    5.482 No_date   28:02   63.62  n/a     .000
       fname :MH107.0100
       remark:Total Flows at MH107
R0100:C00407-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH107        124.74    5.482 No_date   28:02   63.62  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:107-119      124.74    5.468 No_date   28:04   63.62  n/a     .000
       [L/S/n=  114./ .120/.013]
       {Vmax= 1.932:Dmax= 1.665}
       [Din= 1.80:Dused= 2.03}
R0100:C00408-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:107-119      124.74    5.468 No_date   28:04   63.62  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:119-108      124.74    5.480 No_date   28:05   63.62  n/a     .000
       [L/S/n=   66./ .120/.013]
       {Vmax= 1.930:Dmax= 1.664}
       [Din= 1.80:Dused= 2.03}
R0100:C00409-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A12           12.29    2.213 No_date   28:01   62.88 .710     .000
       [XIMP=.41:TIMP=.54]
       [LOSS= 2 :CN= 75.0]
       [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 183.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 33.81: SMAX=225.43: SK= .010]
R0100:C00410-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A12           12.29    2.213 No_date   28:01   62.88  n/a     .000
     Major System   /     1.0 02:A12-MJ          .23     .599 No_date   28:05   62.88  n/a     .000
     Minor System   \     1.0 03:A12-MN        12.06    1.029 No_date   27:48   63.11  n/a     .000
       {MjSysSto=.6720E+03, TotOvfVol=.1477E+03, N-Ovf=    1, TotDurOvf=    0.hrs}
R0100:C00411-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:A13            2.59     .540 No_date   28:01   73.40 .829     .000
       [XIMP=.71:TIMP=.71]
       [LOSS= 2 :CN= 75.0]
       [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 379.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 33.81: SMAX=225.43: SK= .010]
R0100:C00412-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    COMPUTE DUALHYD       1.0 01:A13            2.59     .540 No_date   28:01   73.40  n/a     .000
     Major System   /     1.0 02:A13-MJ          .00     .000 No_date    0:00     .00  n/a     .000
     Minor System   \     1.0 03:A13-MN         2.59     .540 No_date   28:01   73.40  n/a     .000
R0100:C00413-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:Pond-Block     2.94     .490 No_date   28:00   59.56 .673     .000
       [XIMP=.41:TIMP=.41]
       [LOSS= 2 :CN= 75.0]
       [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 183.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 33.81: SMAX=225.43: SK= .010]
R0100:C00414-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:119-108      124.74    5.480 No_date   28:05   63.62  n/a     .000
                    +     1.0 02:A13-MN         2.59     .540 No_date   28:01   73.40  n/a     .000
                    +     1.0 02:A12-MN        12.06    1.029 No_date   27:48   63.11  n/a     .000
                 SUM=     1.0 01:MH108        139.38    6.996 No_date   28:03   63.75  n/a     .000
R0100:C00415-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:MH108        139.38    6.996 No_date   28:03   63.75  n/a     .000
       fname :MH108.0100
       remark:Total Flows at MH108
R0100:C00416-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:MH108        139.38    6.996 No_date   28:03   63.75  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:108-116      139.38    6.987 No_date   28:04   63.75  n/a     .000
       [L/S/n=   77./ .130/.013]
       {Vmax= 2.116:Dmax= 1.798}
       [Din= 1.80:Dused= 2.19}
R0100:C00417-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE PIPE      ->    1.0 02:108-116      139.38    6.987 No_date   28:04   63.75  n/a     .000
 *   [RDT= 1.00] out<-    1.0 01:116-corrig   139.38    6.949 No_date   28:06   63.75  n/a     .000
       [L/S/n=   80./ .130/.013]
       {Vmax= 2.115:Dmax= 1.797}
       [Din= 1.80:Dused= 2.19}
R0100:C00418-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:116-corrig   139.38    6.949 No_date   28:06   63.75  n/a     .000
                    +     1.0 02:Pond-Block     2.94     .490 No_date   28:00   59.56  n/a     .000
                 SUM=     1.0 01:Corrigan     142.32    7.300 No_date   28:04   63.67  n/a     .000
R0100:C00419-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:Corrigan     142.32    7.300 No_date   28:04   63.67  n/a     .000
       fname :Corrigan.0100
       remark:HYD_COMMENT=["Total Flows at Corrigan Pond]
R0100:C00420-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:Corrigan     142.32    7.300 No_date   28:04   63.67  n/a     .000
                out <=    1.0 01:Co-P         142.32    6.658 No_date   28:15   63.67  n/a     .000
           overflow <=    1.0 03:Co-P-OVF        .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.1044E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00421-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:Co-P-OVF        .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:Co-P         142.32    6.658 No_date   28:15   63.67  n/a     .000
                    +     1.0 02:N_TO       54840.69  145.165 No_date   36:58   39.38  n/a     .000
                    +     1.0 02:MH105-JR      36.57    8.679 No_date   28:10   63.16  n/a     .000
                    +     1.0 02:A8-MJ-JR        .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:A9-MJ           .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:A10-MJ          .09     .218 No_date   28:05   59.73  n/a     .000
                    +     1.0 02:A11-MJ          .16     .564 No_date   28:06   67.38  n/a     .000
                    +     1.0 02:A12-MJ          .23     .599 No_date   28:05   62.88  n/a     .000
                    +     1.0 02:A13-MJ          .00     .000 No_date    0:00     .00  n/a     .000
                 SUM=     1.0 01:corrig     55020.07  145.784 No_date   36:56   39.46  n/a     .000
R0100:C00422-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:corrig     55020.07  145.784 No_date   36:56   39.46  n/a     .000
       fname :corrig.0100
       remark:Total Flows at Corrigan Pond
#*****************************************************************************
#    Corrigan Pond 1
#    - Rating curve obtained from Barrhaven South MSS modeling
#    - Tributary Drainage Area to MSS Pond 1 = 145 ha
#*****************************************************************************
#
# Hydrograph from Corrigan Drain routed to Jockvale Road
# Channel X-Section obtained from RVCA Hydraulic Model - Station 2462
#
R0100:C00423-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:corrig     55020.07  145.784 No_date   36:56   39.46  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N_MI       55020.07  145.768 No_date   36:59   39.46  n/a     .000
       [L/S/n=  580./ .445/.045]
       {Vmax= 2.171:Dmax= 2.126}
#*****************************************************************************
#    Catchment MILLS
#    - To SWM Facility north of the Jock
#    - Primarily residental development
#*****************************************************************************
R0100:C00424-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:MILLS        175.99   20.390 No_date   28:06   56.87 .642     .000
       [XIMP=.38:TIMP=.38]
       [LOSS= 2 :CN= 74.0]
       [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI=1118.:MNI=.013:SCI=   .0]
       [IaRECimp=   4.00: IaRECper=   4.00]
       [SMIN= 36.67: SMAX=244.49: SK= .010]
#*****************************************************************************
#    Chapman Mills SWM Pond
#    - Rating curve obtained from CCL hydraulic modeling
#*****************************************************************************
R0100:C00425-----------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
```

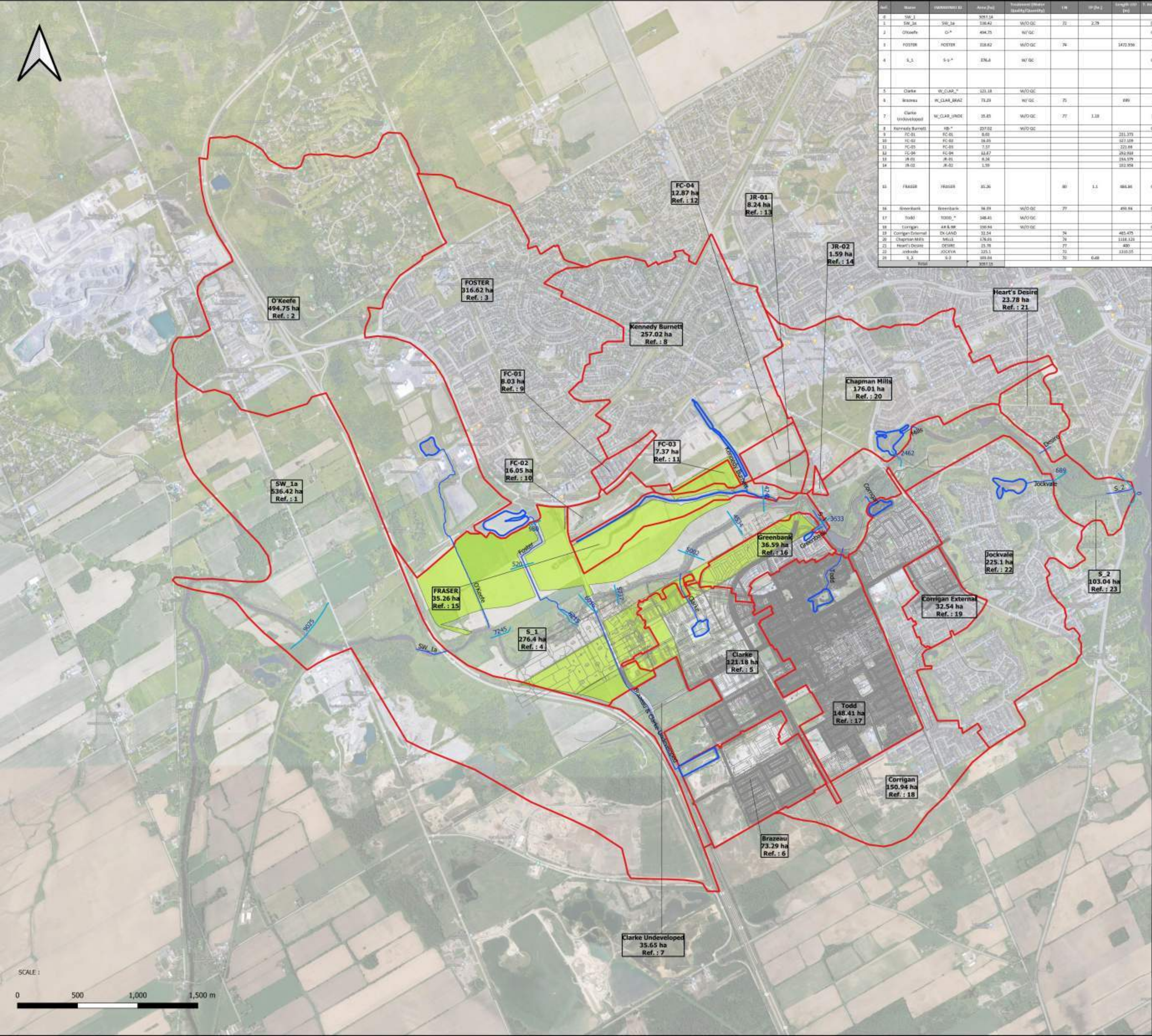
```
    ROUTE RESERVOIR ->    1.0 02:MILLS        175.99   20.390 No_date   28:06   56.87  n/a     .000
                out <=    1.0 01:MILL_P       146.22    4.050 No_date   28:08   56.87  n/a     .000
           overflow <=    1.0 03:MIL-OV        29.77   16.228 No_date   28:08   56.87  n/a     .000
     {MxStoUsed=.2310E+01  m3, TotOvfVol=.1693E+01  m3, N-Ovf=    2, TotDurOvf=    1.hrs}
R0100:C00426------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N_MI       55020.07  145.768 No_date   36:59   39.46  n/a     .000
                    +     1.0 02:MIL-OV        29.77   16.228 No_date   28:08   56.87  n/a     .000
                    +     1.0 02:MILL_P       146.22    4.050 No_date   28:08   56.87  n/a     .000
                 SUM=     1.0 01:SN_MI      55196.05  146.399 No_date   36:58   39.51  n/a     .000
R0100:C00427------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_MI      55196.05  146.399 No_date   36:58   39.51  n/a     .000
      fname :SN_MI.0100
      remark:Total Flows at Jockvale Road
#
# Hydrograph from Jockvale Road routed to Heart's Desire
# Channel X-Section obtained from RVCA Hydraulic Model - Station 689
#
R0100:C00428------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_MI      55196.05  146.399 No_date   36:58   39.51  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N_DE       55196.05  146.071 No_date   37:13   39.51  n/a     .000
      [L/S/n= 1962./ .223/.045]
      {Vmax= 1.642:Dmax= 2.661}
#*****************************************************************************
#    Catchment DESIRE
#    - To Jock River (north of the Jock)
#    - Rural-estate subdivision (Heart's Desire Community)
#*****************************************************************************
R0100:C00429------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:DESIRE        23.78    3.004 No_date   28:03   53.11 .600     .000
      [XIMP=.25:TIMP=.25]
      [LOSS= 2 :CN= 77.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI= 400.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 31.15: SMAX=207.66: SK= .010]
#*****************************************************************************
#    Catchment JOCKVA
#    - To Jockvale SWM Facility
#    - Residential development & golf course
#    - JFSA 2021-01-11 update JOCKVA after updating CORRIG as per IBI GROUP, July 2008.
#      JOCKVA area became 225.13 ha instead of 257.63 ha. JOCKVA separated into two areas JOCKVA and EX-LAND 32.5 ha as
#*****************************************************************************
R0100:C00430------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   1.0 01:JOCKVA       225.13   28.623 No_date   28:07   62.70 .708     .000
      [XIMP=.50:TIMP=.50]
      [LOSS= 2 :CN= 74.0]
      [Pervious     area: IAper= 4.67:SLPP=1.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI=1.00:LGI=1311.:MNI=.013:SCI=   .0]
      [IaRECimp=   4.00: IaRECper=   4.00]
      [SMIN= 36.67: SMAX=244.49: SK= .010]
R0100:C00431------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:EX-LAND-MN    30.73    2.275 No_date   27:48   62.82  n/a     .000
                    +     1.0 02:JOCKVA       225.13   28.623 No_date   28:07   62.70  n/a     .000
                    +     1.0 02:B2-MJ           .36     .820 No_date   28:05   62.88  n/a     .000
                    +     1.0 02:B3-MJ           .19     .402 No_date   28:04   62.88  n/a     .000
                 SUM=     1.0 01:JOCKVA-TO    256.41   31.850 No_date   28:06   62.71  n/a     .000
R0100:C00432------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:JOCKVA-TO    256.41   31.850 No_date   28:06   62.71  n/a     .000
      fname :JOCKVA-TO.0100
      remark:Total Flows at KB first pond
#*****************************************************************************
#    Jockvale SWM Facility
#    - Rating curve obtained from Jockvale Servicing Study (CCL 1999)
#*****************************************************************************
R0100:C00433------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    1.0 02:JOCKVA-TO    256.41   31.850 No_date   28:06   62.71  n/a     .000
                out <=    1.0 01:JOCK_P       256.41   12.850 No_date   28:35   62.71  n/a     .000
           overflow <=    1.0 03:JO-OVF          .00     .000 No_date    0:00     .00  n/a     .000
     {MxStoUsed=.6430E+01  m3, TotOvfVol=.0000E+00  m3, N-Ovf=    0, TotDurOvf=    0.hrs}
R0100:C00434------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N_DE       55196.05  146.071 No_date   37:13   39.51  n/a     .000
                    +     1.0 02:DESIRE        23.78    3.004 No_date   28:03   53.11  n/a     .000
                    +     1.0 02:JO-OVF          .00     .000 No_date    0:00     .00  n/a     .000
                    +     1.0 02:JOCK_P       256.41   12.850 No_date   28:35   62.71  n/a     .000
                 SUM=     1.0 01:SN_DE      55476.25  147.027 No_date   37:12   39.63  n/a     .000
R0100:C00435------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_DE      55476.25  147.027 No_date   37:12   39.63  n/a     .000
      fname :SN_DE.0100
      remark:Total Flows at Heart's Desire
#
# Hydrograph from Heart's Desire routed to Rideau River
# Channel X-Section obtained from RVCA Hydraulic Model - Station 0
#
R0100:C00436------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE CHANNEL   ->    1.0 02:SN_DE      55476.25  147.027 No_date   37:12   39.63  n/a     .000
     [RDT= 1.00] out<-    1.0 01:N1         55476.25  147.014 No_date   37:15   39.63  n/a     .000
      [L/S/n=  563./ .967/.045]
      {Vmax= 2.219:Dmax= 1.328}
#*****************************************************************************
#    Catchment S-2
#    - To Jock River (north and south)
#    - Undeveloped floodplain and river
#*****************************************************************************
R0100:C00437------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     1.0 01:S-2          102.94    5.685 No_date   28:20   40.95 .462     .000
      [CN= 72.0: N= 3.00: Tp=  .40]
      [IaREC= 4.00: SMIN= 39.75: SMAX=264.99: SK= .010]
      [InterEventTime=  12.00]
R0100:C00438------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               1.0 02:N1         55476.25  147.014 No_date   37:15   39.63  n/a     .000
                    +     1.0 02:S-2          102.94    5.685 No_date   28:20   40.95  n/a     .000
                 SUM=     1.0 01:SN_N1      55579.19  147.276 No_date   37:15   39.63  n/a     .000
R0100:C00439------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    SAVE HYD              1.0 01:SN_N1      55579.19  147.276 No_date   37:15   39.63  n/a     .000
      fname :SN_N1.0100
      remark:Total Flows at Rideau River
############################################################################
R0100:C00002----------------------------------------------------------------------------------------
    FINISH
----------------------------------------------------------------------------------------------------
****************************************************************************************************
      WARNINGS / ERRORS / NOTES
      -------------------------
R0002:C00319  ROUTE RESERVOIR
*** WARNING: Inflow peak was not reduced! Check OUTFLOW/STORAGE table or reduce DT.
R0002:C00341  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0002:C00347  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0002:C00380  DIVERT HYD      ->
*** NOTE: Inflow hyd. is dry and cannot be diverted.
R0002:C00400  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0002:C00407  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0002:C00408  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0002:C00416  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0002:C00417  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0005:C00319  ROUTE RESERVOIR
*** WARNING: Inflow peak was not reduced! Check OUTFLOW/STORAGE table or reduce DT.
R0005:C00341  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0005:C00347  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0005:C00363  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0005:C00364  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0005:C00372  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0005:C00380  DIVERT HYD      ->
*** NOTE: Inflow hyd. is dry and cannot be diverted.
R0005:C00395  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0005:C00400  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0005:C00407  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0005:C00408  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0005:C00416  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0005:C00417  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0010:C00341  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0010:C00347  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0010:C00363  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0010:C00364  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0010:C00372  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0010:C00380  DIVERT HYD      ->
*** NOTE: Inflow hyd. is dry and cannot be diverted.
R0010:C00395  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0010:C00400  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0010:C00407  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0010:C00408  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0010:C00416  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0010:C00417  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0025:C00341  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0025:C00347  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0025:C00363  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0025:C00364  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0025:C00372  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0025:C00380  DIVERT HYD      ->
*** NOTE: Inflow hyd. is dry and cannot be diverted.
R0025:C00395  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0025:C00400  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0025:C00407  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0025:C00408  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0025:C00416  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0025:C00417  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0050:C00341  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0050:C00347  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0050:C00363  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0050:C00364  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0050:C00372  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0050:C00380  DIVERT HYD      ->
*** NOTE: Inflow hyd. is dry and cannot be diverted.
R0050:C00395  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0050:C00400  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0050:C00407  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0050:C00408  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0050:C00416  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0050:C00417  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0100:C00341  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0100:C00347  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0100:C00363  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0100:C00364  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0100:C00372  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0100:C00380  DIVERT HYD      ->
*** NOTE: Inflow hyd. is dry and cannot be diverted.
R0100:C00395  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0100:C00400  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0100:C00407  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0100:C00408  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0100:C00416  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
R0100:C00417  ROUTE PIPE      ->
*** WARNING: New pipe size used for routing.
   Simulation ended on 2021-03-04     at 12:01:23
=================================================================================================
```

Ottawa. ON
Paris. ON
Gatineau. QC
Montréal. QC
Québec. QC

Attachment F

Updated Subcatchment Schematics & Tables

Ref.	Name	SWMHYMO ID	Area (ha)	Treatment (Water Quality/Quantity)	CN	TP (hr.)	Length LGI (m)	T. Imperv. (TP (hr))	XIMP	Type	Major System to	Minor System to	Figure	Table	Schematic
0	SW_1		3057.14												
1	SW_1a	SW_1a	536.42	W/O QC	72	2.79		[2.79]		NASHYD	Jock River at Station 7245				
2	O'Keefe	O-*	494.75	W/ QC				0.575		STANDHYD	Jock River at Station 8235		Figure F1 - O'Keefe Sub-catchments	Table F1 - O'Keefe Sub-catchments	Schematic F1 - O'Keefe Sub-catchments
3	FOSTER	FOSTER	316.62	W/O QC	74		1472.956	0.55	0.55	STANDHYD	Jock River at Station 8056		Figure F2 - Foster Sub-catchment	Table F2 - Foster Sub-catchment	
4	S_1	S-1-*	276.4	W/ QC				0.848		STANDHYD	Jock River at Station 5802		Figure 4A - S-1 & Fraser Sub-catchments	Table 4A - S-1 & Fraser Sub-catchments	
													Figure 4B - S-1 & Fraser Sub-catchments	Table 4B - S-1 & Fraser Sub-catchments	
5	Clarke	W_CLAR_*	121.18	W/O QC				0.61		STANDHYD	Jock River at Station 3082		Figure F3 - Clarke & Brazeau Sub-catchments	Table F3-1 - Clarke Sub-catchments	
6	Brazeau	W_CLAR_BRAZ	73.29	W/ QC	75		699	0.65	0.6	STANDHYD	Jock River at Station 8056				
7	Clarke Undeveloped	W_CLAR_UNDE	35.65	W/O QC	77	1.18		[1.1]		NASHYD	Jock River at Station 3082			Figure F3-2 - Brazeau Sub-catchment	
8	Kennedy Burnett	KB-*	257.02	W/O QC				0.357		STANDHYD	Jock River at Station 3633		Figure F4 - Kennedy Burnett Sub-catchments	Table F4 - Kennedy Burnett Sub-catchments	
9	FC-01	FC-01	8.03				221.373	0.47	0.47	STANDHYD	Jock River at Station 3633				
10	FC-02	FC-02	16.05				327.109	0.93	0.93	STANDHYD	Jock River at Station 3633				
11	FC-03	FC-03	7.37				221.68	0.84	0.84	STANDHYD	Jock River at Station 3633				
12	FC-04	FC-04	12.87				292.918	0.84	0.84	STANDHYD	Jock River at Station 3633				
13	JR-01	JR-01	8.24				234.379	0.84	0.84	STANDHYD	Jock River at Station 3633				
14	JR-02	JR-02	1.59				102.958	0.84	0.84	STANDHYD	Jock River at Station 3633				
15	FRASER	FRASER	35.26		80	1.1	884.84	0.565	0.565	STANDHYD	Jock River at Station 3633		Figure 4A - S-1 & Fraser Sub-catchments	Table 4A - S-1 & Fraser Sub-catchments	
													Figure 4B - S-1 & Fraser Sub-catchments	Table 4B - S-1 & Fraser Sub-catchments	
16	Greenbank	Greenbank	36.59	W/O QC	77		491.96	0.462	0.439	STANDHYD	Jock River at Station 2462				
17	Todd	TODD_*	148.41	W/O QC				0.55		STANDHYD	Jock River at Station 2462		Figure F5 - Todd Sub-catchments	Table F5 - Todd Sub-catchments	
18	Corrigan	AR & RR	150.94	W/O QC				0.561		STANDHYD	Jock River at Station 2462		Figure F6 - Corrigan Sub-catchments	Table F6 - Corrigan Sub-catchments	
19	Corrigan External	EX-LAND	32.54		74		465.475	0.5	0.5	STANDHYD	Jock River at Station 2462				
20	Chapman Mills	MILLS	176.01		74		1118.121	0.38	0.38	STANDHYD	Jock River at Station 689				
21	Heart's Desire	DESIRE	23.78		77		400	0.25	0.25	STANDHYD	Jock River at Station 0				
22	Jockvale	JOCKVA	225.1		72		1310.55	0.5	0.5	STANDHYD	Jock River at Station 0				
24	S_2	S-2	103.04		72	0.49		[0.41]		NASHYD	Rideau River				
Total			3057.15												



Legend

Sub-catchments
SW_1
Channel Cross Section
SWMF Drains
SWMF ponds
Approved Developments
Additional Future Developments
Google Hybrid

File name:

Figure 3 - Overall Jock River Lower Reach one Sub-catchments.pdf

XS 4534 — Cross Section at station 4534

SW_1a → Area ID
536.42 ha → Area (ha)
Ref. 1 → Reference Number

J.F. Sabourin and Associates Inc.
WATER RESOURCES AND ENVIRONMENTAL CONSULTANTS
52 Springbrook Drive
Ottawa, ON, K2S 1B9
(613) 836-3884
www.jfsa.com

DSEL
david schaeffer engineering ltd

PROJECT :

BCDC - Quantity Control Study

TITLE :

Figure 3 - Overall Jock River Lower Reach one Sub-catchments

Table 3 - Overall Jock River Lower Reach one Sub-catchments

PROJECT NO.	1474-16
DRAWN:	MM
DATE:	Mar. 2021

Ref.	Name	SWMHYMO ID	Area (ha)	Treatment (Water Quality/Quantity)	CN	TP (hr.)	Length-LGI (m)	T. Imperv. [TP (hr)]	XIMP	Type	Major System To	Minor System To	Figure	Table	Schematic
0	SW_1		3097.14												
1	SW_1a	SW_1a	536.42	W/O QC	72	2.79		[2.79]		NASHYD	Jock River at Station 7245				
2	O'Keefe	O-*	494.75	W/ QC				0.575		STANDHYD	Jock River at Station 6215		Figure F1 - O'Keefe Sub-catchments	Table F1 - O'Keefe Sub-catchments	Schematic F1 - O'Keefe Sub-catchments
3	FOSTER	FOSTER	316.62	W/O QC	74		1472.956	0.55	0.55	STANDHYD	Jock River at Station 6016		Figure F2 - Foster Sub-catchment	Table F2 - Foster Sub-catchment	
4	S_1	S-1-*	276.4	W/ QC				0.646		STANDHYD	Jock River at Station 5002		Figure 4A - S-1 & Fraser Sub-catchments Figure 4B - S-1 & Fraser Sub-catchments	Table 4A - S-1 & Fraser Sub-catchments Table 4B - S-1 & Fraser Sub-catchments	
5	Clarke	W_CLAR_*	121.18	W/O QC				0.61		STANDHYD	Jock River at Station 5002		Figure F3 - Clarke & Brazeau Sub-catchments	Table F3-1 - Clarke Sub-catchments	
6	Brazeau	W_CLAR_BRAZ	73.29	W/ QC	75		699	0.65	0.6	STANDHYD	Jock River at Station 6016				
7	Clarke Undeveloped	W_CLAR_UNDE	35.65	W/O QC	77	1.10		[1.1]		NASHYD	Jock River at Station 5002			Figure F3-2 - Brazeau Sub-catchment	
8	Kennedy Burnett	KB-*	257.02	W/O QC				0.557		STANDHYD	Jock River at Station 3633		Figure F4 - Kennedy Burnett Sub-catchments	Table F4 - Kennedy Burnett Sub-catchments	
9	FC-01	FC-01	8.03				231.373	0.47	0.47	STANDHYD	Jock River at Station 3633				
10	FC-02	FC-02	16.05				327.109	0.93	0.93	STANDHYD	Jock River at Station 3633				
11	FC-03	FC-03	7.37				221.66	0.64	0.64	STANDHYD	Jock River at Station 3633				
12	FC-04	FC-04	12.87				292.916	0.64	0.64	STANDHYD	Jock River at Station 3633				
13	JR-01	JR-01	8.24				234.379	0.64	0.64	STANDHYD	Jock River at Station 3633				
14	JR-02	JR-02	1.59				102.956	0.64	0.64	STANDHYD	Jock River at Station 3633				
15	FRASER	FRASER	35.26		80	1.1	484.84	0.585	0.585	STANDHYD	Jock River at Station 3633		Figure 4A - S-1 & Fraser Sub-catchments Figure 4B - S-1 & Fraser Sub-catchments	Table 4A - S-1 & Fraser Sub-catchments Table 4B - S-1 & Fraser Sub-catchments	
16	Greenbank	Greenbank	36.59	W/O QC	77		493.96	0.682	0.639	STANDHYD	Jock River at Station 2462				
17	Todd	TODD_*	148.41	W/O QC				0.55		STANDHYD	Jock River at Station 2462		Figure F5 -Todd Sub-catchments	Table F5 -Todd Sub-catchments	
18	Corrigan	A# & B#	150.94	W/O QC				0.541		STANDHYD	Jock River at Station 2462		Figure F6 -Corrigan Sub-catchments	Table F6 -Corrigan Sub-catchments	
19	Corrigan External	EX-LAND	32.54		74		465.475	0.5	0.5	STANDHYD	Jock River at Station 2462				
20	Chapman Mills	MILLS	176.01		74		1118.123	0.38	0.38	STANDHYD	Jock River at Station 689				
21	Heart's Desire	DESIRE	23.78		77		400	0.25	0.25	STANDHYD	Jock River at Station 0				
22	Jockvale	JOCKVA	225.1		72		1310.55	0.5	0.5	STANDHYD	Jock River at Station 0				
23	S_2	S-2	103.04		72	0.40		[0.4]		NASHYD	Rideau River				
Total			3097.15												

Legend

Channel Cross Sections

S-1 Sub-catchments and Fraser Sub-catchments

- S-1 Sub-catchments
- FRASER-DRN
- FRASER-D

Google Hybrid

File name:

Figure 4A - S-1 & Fraser Clarke Sub-catchments.pdf

XS 3633 — Cross Section at station 3633

S-1-A — Area ID
90.84 ha — Area (ha)
Ref. 1 — Reference Number

J.F. Sabourin and Associates Inc.
WATER RESOURCES AND ENVIRONMENTAL CONSULTANTS
52 Springbrook Drive
Ottawa, ON, K2S 1B9
(613) 836-3884
www.jfsa.com

DSEL
david schaeffer engineering ltd

PROJECT :

BCDC - Quantity Control Study

TITLE :

Figure 4A - S-1 & Fraser Clarke Sub-catchments

Table 4A - S-1 & Fraser Clarke Sub-catchments

PROJECT NO.	1474-16
DRAWN:	MM
DATE:	Mar. 2021

Ref.	Name ID (S-1 is developed and Fraser is developed with DUALHYD)	Description	Area (ha)	Major System To	Minor System To	TP (hr) [TIMP]	Slope (%) SLPP (Pervious)	SLPI (Impervious)	LGI (m)	CN	DUALHYD parameters Max Flow Rate(cms)-5-year inlet capture rate (24-hour SCS)	Major System storage (cu-m)	ROUTE CHANNEL (Station 5002) NHYDin	NHYDout	LENGTH (m)	SLOPE (%)	DISTANCE (m)	ELEVATION (m)
1	S-1-A	will remain undeveloped	75.88	SN_FO (Total Flows at Foster Drain)		0.619				77			SN_CE = ["N_CE"[1] +"S-1-D4" +"S-1-D5" +"MS_P2"[2] +"P2-OVF"[2]]	"5737" (NHYDout from ROUTE CHANNEL at Channel X-Section obtained from RVCA Hydraulic Model - Station 5737)	270	0.02593	-1060.52	94
2	S-1-B	will remain undeveloped	55.36	4241 (Total Flows before Station 4241		0.451				77							-268.6	91.5
3	S-1-D1	will be Developed	21.67	5002 (Total Flows before Station 5002		[0.65]	2	0.75	380.088	75							-259.43	91.5
4	S-1-D2	will be Developed	18.67	SN_OK (Total Flows at Okeefe Drain)		[0.65]	2	0.75	352.798	75							-179.48	91.5
5	S-1-D3	will be Developed	6.79	SN_OK (Total Flows at Okeefe Drain)		[0.65]	2	0.75	212.760	75							-67.9	91.5
6	S-1-D4	will be Developed	3.28	SN_CE (Total Flows before Station 5737		[0.65]	2	0.75	147.874	75							-59.21	91.5
7	S-1-D5	will be Developed	12.84	SN_CE (Total Flows before Station 5737		[0.65]	2	0.75	292.575	75							-33.19	91
8	S-1-D6	will be Developed	1.75	5002 (Total Flows before Station 5002		[0.65]	2	0.75	108.012	75							-26.08	90.5
9	S-1-D7	will be Developed	2.03	5002 (Total Flows before Station 5002		[0.65]	2	0.75	116.333	75							-24.04	90
10	S-1-D8	will be Developed	5.27	SN_FO (Total Flows at Foster Drain)		[0.65]	2	0.75	187.439								-13.14	86.77
11	S-1-FO-D1	was part of Foster (Developed)	5.11	520 (Total Flows at Sation 520 on Foster Drain)		[0.65]	0.5	0.5	184.572	74							0	85
12	S-1-FO-D2	was part of Foster (Developed)	4.94	980 (Total Flows at Station 980 on Foster Drain)		[0.55]	0.5	0.5	181.475	74							14.68	86.74
13	S-1-FO-F-D	was part of Foster (will be Developed in the Future)	14.96	SN_FO (Total Flows at Foster Drain)		[0.65]	0.5	0.5	315.806	74							23.92	90
14	S-1-Okeefe	was part of O'Keefe	44.93	SN_416 (Total Flows after Highway 416 and before XS Station 7245)		[0.65]	2	0.75	547.296	75							25.78	90.5
																	31.91	91
																	91.95	91.5
																	772.15	92
																	961.49	92.5
																	1044.69	93
																	1130.8	95
													5002= ["5737" +"S-1-D1" +"S-1-D6" +"S-1-D7"]	N_WC (NHYDout from ROUTE CHANNEL at Channel X-Section obtained from RVCA Hydraulic Model - Station 5002)	736	0.09511	-601.81	91.5
																	-37.5	90
																	-19.61	87.04
																	0	85.7
																	14.87	86.93
																	37.5	90
																	38.54	90.5
																	42.23	91
																	157.05	91.5
													N_WC	N_KB (NHYDout from ROUTE CHANNEL at Channel X-Section obtained from RVCA Hydraulic Model - Station 4534 (Hydrograph from Node West Clarke routed to Node at Kennedy - Burnett Drain))	1020	0.0498	-1082.01	94
																	-1028.17	92.5
																	-992.3	93.5
																	-279.34	90
																	-23.63	90
																	-13.45	87.13
																	-0.07	86.24
																	10.54	87.15
																	23.63	90
																	24.86	90.5
																	26.72	91
																	45.07	91.5
																	128.17	91.5
																	270.7	92.5
																	728.3	95
15	FRASER-D	Fraser Clarke Drain (will remain undeveloped)	21.61	4241 (Total Flows at Ken-Burnett Outlet and before XS Station 4241)		[0.585]	1	1	379.561	80	2.281	9999999 (an imaginary number so all water is kept Inside)	4241= ["KB-Pond3"[3] +"S-1-B" +"FRASER-DRN" +"FRASER-S" +"N_KB" +"FC-01-S"[4] +"FC-02-S"[5] +"FC-03-S"[6]]	4241-out (NHYDout from ROUTE CHANNEL at Channel X-Section obtained from RVCA Hydraulic Model - Station 4241)	294	0.1088	-909.72	95
																	-907.09	94.5
																	-904.65	94
																	-902.26	93.5
																	-44.51	91.5
16	FRASER-DRN	Fraser Clarke Developed Area	13.65	4241 (Total Flows at Ken-Burnett Outlet and before XS Station 4241)		0.4258				77							-25.1	91.5
																	-20.98	91
																	-20.61	90.5
																	-20.12	90
																	-6.13	87.26
																	17.51	86.56
																	31.37	87.2
																	45.26	90
																	50.41	90.5
																	63.06	91
																	134.5	91.5
																	190.63	92
																	251.98	92.5
																	321.32	93.5
																	403.84	95
													SN_KB= ["4241-out" +"FC-04-S"[7] +"JR-01-S"[8] +"JR-02-S"[9]]	N_TO (NHYDout from ROUTE CHANNEL at Channel X-Section obtained from RVCA Hydraulic Model - Station 3633 (Hydrograph from Node Ken-Burnett to Node Todd))	608	0.24671	-29.24	91
																	-27.41	90.5
																	-25.64	90
																	-23.74	89.5
																	-22	89.26
																	-20	88.51
																	-19	88.32
																	-15	88.1
																	-10	88.11
																	-5	88.17
																	0	88.27
																	5	88.19
																	10	88.06
																	15	88.48
																	16	88.7
																	23.74	89.5
																	24.68	90
																	25.57	90.5
																	26.5	91
S-1 Total Area (ha)			197.6															
FRASER Total Area (ha)			35.26															

(1) N_CE is NHYDout from ROUTE CHANNEL at Channel X-Section obtained from RVCA Hydraulic Model - Station 6016 (Hydrograph from Node Foster routed to Node at Cedarview Road)

(2) "MS_P2" and "P2-OVF" are the outflow and the overflow from ROUTE RESERVOIR of the Clarke sub-catchment

(3) "KB-Pond3" =Total Flows at KB third pond

(4 & 5 & 6 & 7) "FC-01-S" & "FC-02-S" & "FC-03-S" & "FC-04-S" = Existing / Proposed Subcatchments To Fraser Clarke Drain as per NOVATECH Report June, 2020

(8 & 9) "JR-01-S" & "JR-02-S" = Proposed Subcatchments To Jock River as per NOVATECH Report June, 2020

Legend

— Channel Cross Sections

S-1 Sub-catchments and Fraser Sub-catchments

- S-1 Sub-catchments
- FRASER-DRN
- FRASER-D

Google Hybrid

File name:

Figure 4B - S-1 & Fraser Clarke Sub-catchments.pdf

XS 3633 Cross Section at station 3633

S-1-A → Area ID

90.84 ha → Area (ha)

Ref. 1 → Reference Number

J.F. Sabourin and Associates Inc.

WATER RESOURCES AND ENVIRONMENTAL CONSULTANTS

52 Springbrook Drive (613) 836-3884

Ottawa, ON, K2S 1B9 www.jfsa.com

DSEL

david schaeffer engineering ltd

PROJECT :

BCDC - Quantity Control Study

TITLE :

Figure 4B - S-1 & Fraser Clarke Sub-catchments

Table 4B - S-1 & Fraser Clarke Sub-catchments

PROJECT NO.	1474-16
DRAWN:	MM
DATE:	Mar. 2021

Ref.	Name ID (S-1 is developed with DUALHYD & ROUTE RESERVOIR and Fraser is developed with DUALHYD)	Description	Area (ha)	Major System To	Minor System To	TP (hr) [TIMP]	Slope (%) SLPP (Pervious)	Slope (%) SLPI (Impervious)	LGI (m)	CN	DUALHYD parameters: Max Flow Rate(cms)- 5-year inlet capture rate (24-hour SCS)	DUALHYD parameters: Major System storage (cu-m)	ROUTE RESERVOIR: NHYDin	ROUTE RESERVOIR: NHYDout	ROUTE RESERVOIR: NHYDovf (OVERFLOW)	ROUTE RESERVOIR: Outflow (cms)	ROUTE RESERVOIR: Storage (ha-m)
1	S-1-A	will remain undeveloped	75.88	SN_FO (Total Flows at Foster Drain)		0.619				77							
2	S-1-B	will remain undeveloped	55.36	4241 (Total Flows before Station 4241		0.451				77							
3	S-1-D1	will be Developed	21.67	5002 (Total Flows before Station 5002		[0.65]	2	0.75	380.088	75	2.409	9999999	S-1-D1S	S-1-D1R	S-1-D1Rovf	0.3033	1.0125
4	S-1-D2	will be Developed	18.67	SN_OK (Total Flows at Okeefe Drain)		[0.65]	2	0.75	352.798	75	2.097	9999999	S-1-D2S	S-1-D2R	S-1-D2Rovf	0.2485	0.8297
5	S-1-D3	will be Developed	6.79	SN_OK (Total Flows at Okeefe Drain)		[0.65]	2	0.75	212.760	75	0.831	9999999	S-1-D3S	S-1-D3R	S-1-D3Rovf	0.079	0.2639
6	S-1-D4	will be Developed	3.28	SN_CE (Total Flows before Station 5737		[0.65]	2	0.75	147.874	75	0.421	9999999	S-1-D4S	S-1-D4R	S-1-D4Rovf	0.0392	0.1308
7	S-1-D5	will be Developed	12.84	SN_CE (Total Flows before Station 5737		[0.65]	2	0.75	292.575	75	1.5	9999999	S-1-D5S	S-1-D5R	S-1-D5Rovf	0.1611	0.5377
8	S-1-D6	will be Developed	1.75	5002 (Total Flows before Station 5002		[0.65]	2	0.75	108.012	75	0.232	9999999	S-1-D6S	S-1-D6R	S-1-D6Rovf	0.0222	0.0742
9	S-1-D7	will be Developed	2.03	5002 (Total Flows before Station 5002		[0.65]	2	0.75	116.333	75	0.265	9999999	S-1-D7S	S-1-D7R	S-1-D7Rovf	0.2767	0.9238
10	S-1-D8	will be Developed	5.27	SN_FO (Total Flows at Foster Drain)		[0.65]	2	0.75	187.439		0.672	9999999	S-1-D8S	S-1-D8R	S-1-D8Rovf	0.0630	0.2102
11	S-1-FO-D1	was part of Foster (Developed)	5.11	520 (Total Flows at Sation 520 on Foster Drain)		[0.65]	0.5	0.5	184.572	74	0.605	9999999	S-1-FO-D1S	S-1-FO-D1R	S-1FOD1ovf	0.0693	0.2313
12	S-1-FO-D2	was part of Foster (Developed)	4.94	980 (Total Flows at Station 980 on Foster Drain)		[0.55]	0.5	0.5	181.475	74	0.508	9999999	S-1-FO-D2S	S-1-FO-D2R	S-1FOD2ovf	0.067	0.2236
13	S-1-FO-F-D	was part of Foster (will be Developed in the Future)	14.96	SN_FO (Total Flows at Foster Drain)		[0.65]	0.5	0.5	315.806	74	1.615	9999999	S-1FO-F-DS	S-1FO-F-DR	S-1FO-F-DR	0.2215	0.7396
14	S-1-Okeefe	was part of O'Keefe	44.93	SN_416 (Total Flows after Highway 416 and before XS Station 7245)		[0.65]	2	0.75	547.296	75	4.591	9999999	S-1-OkS	S-1-OkSR	S-1-OkSovf	0.639	2.1333
15	FRASER-D	Fraser Clarke Drain (will remain undeveloped)	21.61	4241 (Total Flows at Ken-Burnett Outlet and before XS Station 4241)		[0.585]	1	1	379.561	80	2.281	9999999 (an imaginary number so all water is kept Inside)					
16	FRASER-DRN	Fraser Clarke Developed Area	13.65	4241 (Total Flows at Ken-Burnett Outlet and before XS Station 4241)		0.4258				77							
S-1 Total Area (ha)			273.48														
FRASER Total Area (ha)			35.26														

ROUTE CHANNEL (Station 5002): NHYDin	NHYDout	LENGTH (m)	SLOPE (%)	DISTANCE (m)	ELEVATION (m)
SN_CE = ["N_CE"[1] +"S-1-D4R" +"S-1-D5R" +"S-1-D4Rovf" +"S-1-D5Rovf" +"MS_P2"[2]+" P2-OVF"[2]]	"5737" (NHYDout from ROUTE CHANNEL at Channel X-Section obtained from RVCA Hydraulic Model - Station 5737)	270	0.02593	-1060.52	94
				-268.6	91.5
				-259.43	91.5
				-179.48	91.5
				-67.9	91.5
				-59.21	91.5
				-33.19	91
				-26.08	90.5
				-24.04	90
				-13.14	86.77
				0	85
				14.68	86.74
				23.92	90
				25.78	90.5
				31.91	91
				91.95	91.5
				772.15	92
				961.49	92.5
				1044.69	93
				1130.8	95
5002= ["5737" +"S-1-D1R" +"S-1-D6R" +"S-1-D7R" +"S-1-D1Rovf" +"S-1-D6Rovf" +"S-1-D7Rovf"]	N_WC (NHYDout from ROUTE CHANNEL at Channel X-Section obtained from RVCA Hydraulic Model - Station 5002)	736	0.09511	-601.81	91.5
				-37.5	90
				-19.61	87.04
				0	85.7
				14.87	86.93
				37.5	90
				38.54	90.5
				42.23	91
				157.05	91.5
N_WC	N_KB (NHYDout from ROUTE CHANNEL at Channel X-Section obtained from RVCA Hydraulic Model - Station 4534 (Hydrograph from Node West Clarke routed to Node at Kennedy - Burnett Drain))	1020	0.0498	-1082.01	94
				-1028.17	92.5
				-992.3	93.5
				-279.34	90
				-23.63	90
				-13.45	87.13
				-0.07	86.24
				10.54	87.15
				23.63	90
				24.86	90.5
				26.72	91
				45.07	91.5
				128.17	91.5
				270.7	92.5
				728.3	95
4241= ["KB-Pond3"[3] +"S-1-B" +"FRASER-DRN" +"FRASER-S" +"N_KB" +"FC-01-S"[4] +"FC-02-S"[5] +"FC-03-S"[6]]	4241-out (NHYDout from ROUTE CHANNEL at Channel X-Section obtained from RVCA Hydraulic Model - Station 4241)	294	0.1088	-909.72	95
				-907.09	94.5
				-904.65	94
				-902.26	93.5
				-44.51	91.5
				-25.1	91.5
				-20.98	91
				-20.61	90.5
				-20.12	90
				-6.13	87.26
				17.51	86.56
				31.37	87.2
				45.26	90
				50.41	90.5
				63.06	91
				134.5	91.5
				190.63	92
				251.98	92.5
				321.32	93.5
				403.84	95
SN_KB= ["4241-out" +"FC-04-S"[7] +"JR-01-S"[8] +"JR-02-S"[9]]	N_TO (NHYDout from ROUTE CHANNEL at Channel X-Section obtained from RVCA Hydraulic Model - Station 3633 (Hydrograph from Node Ken-Burnett to Node Todd))	608	0.24671	-29.24	91
				-27.41	90.5
				-25.64	90
				-23.74	89.5
				-22	89.26
				-20	88.51
				-19	88.32
				-15	88.1
				-10	88.11
				-5	88.17
				0	88.27
				5	88.19
				10	88.06
				15	88.48
				16	88.7
				23.74	89.5
				24.68	90
				25.57	90.5
				26.5	91

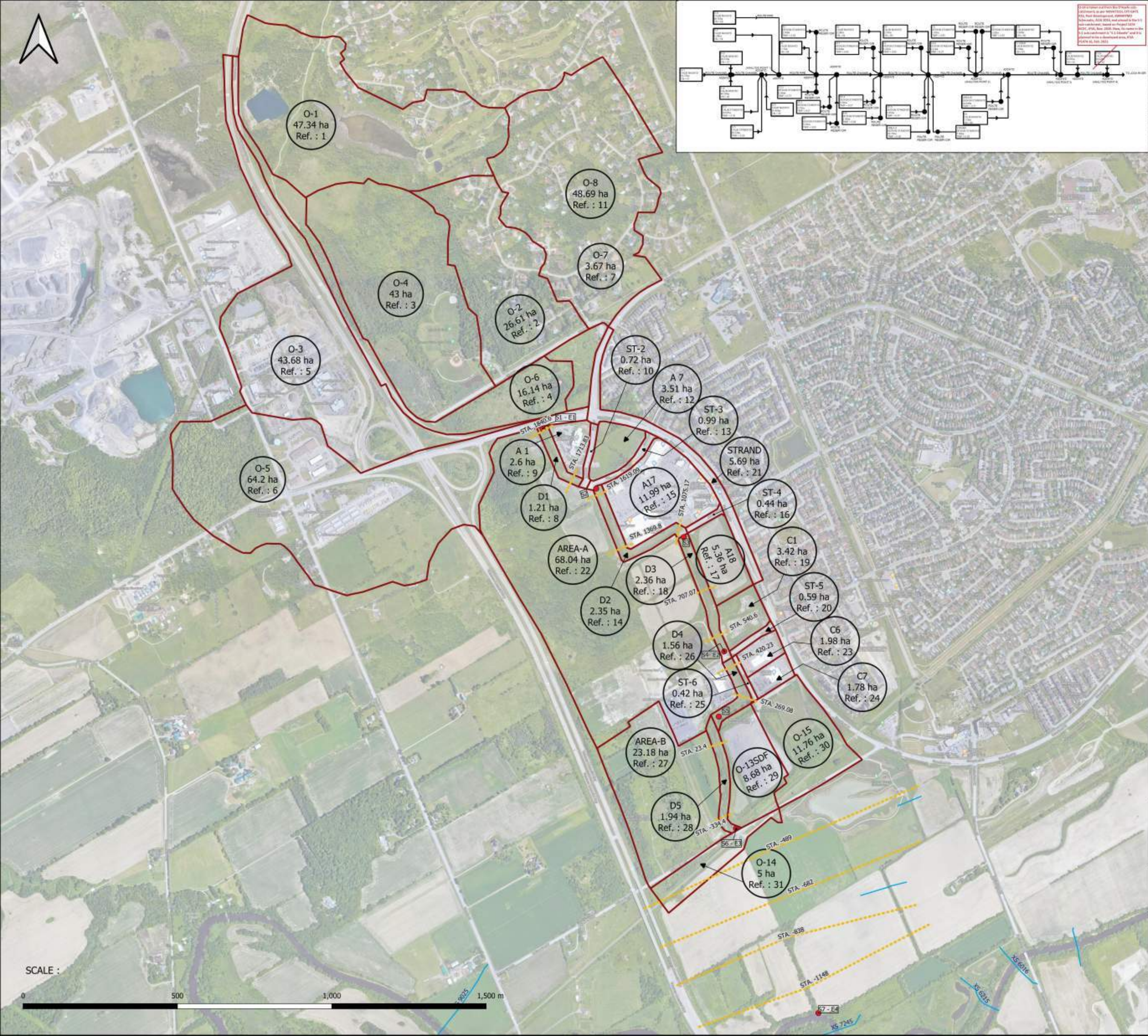
[1] N_CE is NHYDout from ROUTE CHANNEL at Channel X-Section obtained from RVCA Hydraulic Model - Station 6016 (Hydrograph from Node Foster routed to Node at Cedarview Road)

[2] "MS_P2" and "P2-OVF" are the outflow and the overflow from ROUTE RESERVOIR of the Clarke sub-catchment

[3] "KB-Pond3" =Total Flows at KB third pond

[4 & 5 & 6 & 7] "FC-01-S" & "FC-02-S" & "FC-03-S" & "FC-04-S" = Existing / Proposed Subcatchments To Fraser Clarke Drain as per NOVATECH Report June, 2020

[8 & 9] "JR-01-S" & "JR-02-S" = Proposed Subcatchments To Jock River as per NOVATECH Report June, 2020



File name:

Figure F1 - O'Keefe Sub-catchments.pdf

Legend

20210129-O'Keefe Sub-catchment Boundaries

O'Keefe Sub-catchment Boundaries

Google Hybrid

XS 7245 Cross Section at station 7245

S1 - E1 HYDROLOGIC MODELING (SWMHYMO) ANALYSIS POINT - ENVIRONMENTAL MANAGEMENET (EMP) ANALYSIS POINT

O-1 47.34 ha Ref. : 1 — Area ID, Area (ha), Reference Number

STA. 1840.6 CROSS SECTION AND STATION

J.F. Sabourin and Associates Inc.
WATER RESOURCES AND ENVIRONMENTAL CONSULTANTS
52 Springbrook Drive
Ottawa, ON, K2S 1B9
(613) 836-3884
www.jfsa.com

DSEL
david schaeffer engineering ltd

PROJECT :	BCDC - Quantity Control Study
TITLE :	Figure F1 - O'Keefe Sub-catchments Table F1 - O'Keefe Sub-catchments Schematic F1 - O'Keefe Sub-catchments
PROJECT NO.	1474
DRAWN:	MM
DATE:	Mar. 2021

Ref.	ID O'Keefe	Area (ha) (from Novatech Report AUG2014)	Area (ha) (from GIS- JFSA P1474-16-QC,JAN2021)	Major System To / Minor System To	T. Imperv. [TP (hr)]	XIMP	CN	Slope (%)
1	O-1	63.72	47.34	OKF-N (NORTH OF	[0.9]		61	
2	O-2	28.61	26.61	OKF-N (NORTH OF	[1.1]		57	
3	O-4	46.94	43	OKF-N (NORTH OF	[0.9]		49	
4	O-6	16.46	16.14	PT1[1](WEST OF THE	[0.7]		43	
5	O-3	39.67	43.68	PT1[1](WEST OF THE	0.3	0.15	50	0.32
6	O-5	60.63	64.2	PT1[1](WEST OF THE	0.26	0.13	61	1.38
7	O-7	5.28	3.67	FF(TOTAL FLOW	[0.6]		54	
8	D1	1.17	1.21	ST2-IN [2]	[0.28]		84	
9	A1	2.5	2.6	ST2-IN [2]	0.85	0.68	Horton	0.5
10	ST-2	0.59	0.72	ST2-IN [2]	0.57	0.46	Horton	0.5
11	O-8	60.55	48.69	ST2-IN [2]	[1]		69	
12	A7	3.51	3.51	PT2ST3(TOTAL FLOW	0.85	0.68	Horton	0.5
13	ST-3	0.71	0.99	PT2ST3(TOTAL FLOW	0.57	0.46	Horton	0.5
14	D2	2.28	2.35	PT3ST4 (TOTAL FLOW	[0.99]		84	
15	A17	12.04	11.99	PT3ST4 (TOTAL FLOW	0.85	0.68	Horton	0.5
16	ST-4	0.35	0.44	PT3ST4 (TOTAL FLOW	0.57	0.46	Horton	0.5
17	A18	5.3	5.36	PT3ST4 (TOTAL FLOW	0.85	0.68	Horton	0.5
18	D3	2.51	2.36	ST5-E [5]	[0.73]		86	
19	C1	3.41	3.42	ST5-E [5]	0.85	0.68	Horton	0.5
20	ST-5	0.45	0.59	ST5-E [5]	0.57	0.46	Horton	0.5
21	STRAND	7.59	5.69	SSAOUT [4]	0.85	0.64	Horton	0.5
22	AREA-A	68.04	68.04	PT4ST5[3](TOTAL	0.8	0.64	Horton	0.5
23	C6	1.87	1.98	PT5ST6(TOTAL FLOW	0.85	0.68	Horton	0.5
24	C7	1.62	1.78	PT5ST6(TOTAL FLOW	0.85	0.68	Horton	0.5
25	ST-6	0.41	0.42	PT5ST6(TOTAL FLOW	0.57	0.46	Horton	0.5
26	D4	1.73	1.56	D4-EX	[0.60]		88	
27	AREA-B	24.04	23.08	D4-EX	0.77	0.62	Horton	1.4
28	D5	1.9	1.93	PT6MC [6] (McKenna	[0.69]		86	
29	O-13SDF	9.74	8.8	PT6MC [6] (McKenna	[0.43]		81	
30	O-15	10.67	11.76	M-C	[0.30]		82	
31	O-14	30.02	5	OKEEFE	[0.133]		82	
Total		514.31	458.91					

ROUTE RESERVOIR

NHYDin	NHYDout	NHYDovf (OVERFLOW)	Outflow (cms)	Storage (ha-m)
A1	A1-STR	A1-OVF	0.035	0.038
			0.072	0.051
			0.1	0.059
			0.125	0.07
			0.16	0.074
			0.185	0.081
ST-2	ST2STR	ST2OVF	0.052	0.001
			0.053	0.008
A7	A7-STR	A7-OVF	0.049	0.054
			0.102	0.072
			0.14	0.082
			0.175	0.099
			0.225	0.105
			0.26	0.114
ST-3	ST3STR	ST3OVF	0.063	0.001
			0.064	0.0094
A17	A17STR	A17OVF	0.169	0.185
			0.349	0.248
			0.482	0.283
			0.602	0.338
			0.771	0.359
			0.891	0.391
ST-4	ST4STR	ST4OVF	0.031	0.001
			0.032	0.005
A18	A18STR	A18OVF	0.074	0.082
			0.154	0.109
			0.212	0.125
			0.265	0.149
			0.339	0.158
			0.392	0.172
C1	C1-STR	C1-OVF	0.048	0.052
			0.099	0.07
			0.136	0.08
			0.17	0.096
			0.218	0.102
			0.252	0.111
ST-5	ST5STR	ST5OVF	0.04	0.001
			0.041	0.0062
STRAND	S-POND	S-OVF	0.033	0.188
			0.057	0.253
			0.104	0.287
			0.16	0.336
			0.34	0.346
			0.471	0.36
			0.824	0.39
Area-A	SWMF-A	SWMAOV	0.103	1.077
			0.128	1.749
			0.382	2.282
			0.703	2.582
			1.256	2.978
			1.567	3.202
			1.955	3.493
			2.1	3.6
C6	C6-STR	C6-OVF	0.026	0.029
			0.054	0.038
			0.075	0.044
			0.093	0.052
			0.12	0.056
			0.138	0.061
C7	C7-STR	C7-OVF	0.023	0.025
			0.047	0.033
			0.065	0.038
			0.081	0.045
			0.104	0.048
			0.12	0.053
ST-6	ST6STR	ST6OVF	0.036	0.001
			0.037	0.0058
Area-B	SWMF-B	SWMBOVF	0.025	0.09
			0.175	0.51
			0.35	0.71
			0.495	0.82
			0.648	0.98
			0.965	1.045
			1.072	1.14
O-13SDF	SDF	OVFSDF	0.15	0.6
			0.2	1.5

ROUTE CHANNEL [ROUTE PIPE]

NHYDin	NHYDout	LENGTH (m)	SLOPE (%)	DISTANCE (m)	ELEVATION (m)
O-1	O-1R	960	0.63	0	2
				4	0
				6	0
				10	2
OKF-N = ["O-1R" + "O-2"+"O-4"]	OKF-NR	210	0.81	14.62	1.56
				18.41	1.44
				22.43	0
				25.07	0.7
				29.1	1.79
				33.73	2.71
				45.54	3.58
FF=["PT1[1]"+" O-7"]	DRAIN1	302	1	3.45	0.6
				13.45	0.5
				14.45	0
				15.55	0
				16.55	0.5
				26.55	0.6
				30	1.7
[O-8]	[O8PIPE]	[335.1]	[0.1]	[Width= 1800 mm]	[Hight= 1200 mm]
PT2ST3= ["ST2-IN[2]" +"A7-STR" +"A7-OVF" +"ST3STR" +"ST3OVF"]	DRAIN2	592	0.23	2.6	0.95
				12.6	0.75
				14.1	0
				15.9	0
				17.4	0.75
				27.4	0.95
				30	1.7
PT3ST4= ["DRAIN2"+"D 2"+ "A17STR"+ "A17OVF"+ "ST4STR"+ "ST4OVF"+ "A18STR"+ "A18OVF"]	DRAIN3	525	0.23	2.5	1
				12.5	0.8
				14.1	0
				15.9	0
				17.5	0.8
				27.5	1
				30	1.7
PT5ST6= ["PT4ST5[3]"+ "C6-STR"+ "C6-OVF"+ "C7-STR"+ "C7-OVF"+ "ST6STR"+ "ST6OVF"]	DRAIN4	324	0.1	2	1.2
				12	1
				14	0
				16	0
				18	1
				28	1.2
				30	2
D4-EX= ["DRAIN4"+ "D4" + "SWMF-B"+ "SWMBOVF"]	DRAIN5	413	0.16	0	1.41
				6.13	0.97
				12.29	0.89
				15.71	0
				17.97	0.39
				23.04	0.35
				32.83	0.96
				32.84	2.5
M-C= ["PT6MC[6]"+ "O-15"]	O-14Ch	845.3	0.1	0	1.53
				5.56	1.47
				9.21	1.45
				12.45	1.53
				13.7	1.5
				15	0.69
				15.34	0
				16.51	0.05
				17.3	0.17
				18.04	0.74
				19.29	1.32
				22.73	1.47
				31.84	1.41
				31.85	2.5
SN_OK (Total Flows at Okeefe Drain)	**N_FO** is NHYDout from ROUTE CHANNEL at Channel X-Section obtained from RVCA Hydraulic Model - Station 6215 (Hydrograph from Node Okeefe routed to Node at Foster Drain)	1183	0.0761	-794.18	91
				-775.41	91.5
				-702.63	91.5
				-546.19	91.5
				-529.54	91.5
				-323.44	91
				-320.71	91
				-183.59	91
				-182.54	90.5
				-181.36	90
				-177.37	90
				-87.7	90
				-33.89	90
				-18.52	86.88
				0	85.2
				16.2	86.83
				31.59	90
				33.03	90.5
				34.41	91

[1] PT1=["OKF-NR"+"O-3"+"O-5"+"O-6"]

[2] ST2-IN=["DRAIN1"+"D1"+"A1-STR"+"A1-OVF"+"ST2STR"+"ST2OVF"+"O8PIPE"]

[3] PT4ST5=["SSAOUT[4]"+"SWMF-A"+"SWMAOV"]

[4] SSAOUT=["ST5-E[5]"+"S-POND"+"S-OVF"]

[5] ST5-E["DRAIN3"+"D3"+"C1-STR"+"C1-OVF"+"ST5STR"+"ST5OVF"]

[6] PT6MC=["DRAIN5"+"D5"+"SDF"]

Ref.	Name ID	Area (ha)	Major System To	Minor System To	T. Impera.	XIMP	CN	LGE Length (m) =SQRT (Area*10000/1.5)	Slope (%) SLPP (Pervious)	Slope (%) SLPI (Impervious)	ROUTE RESERVOIR NHYDin	ROUTE RESERVOIR NHYDout	ROUTE RESERVOIR NHYDovf (OVERFLOW)	ROUTE RESERVOIR Outflow (cms)	ROUTE RESERVOIR Storage (ha-m)	ROUTE CHANNEL (Station 6016) NHYDin	ROUTE CHANNEL (Station 6016) NHYDout	ROUTE CHANNEL (Station 6016) LENGTH (m)	ROUTE CHANNEL (Station 6016) SLOPE (%)	ROUTE CHANNEL (Station 6016) DISTANCE (m)	ROUTE CHANNEL (Station 6016) ELEVATION (m)
1	FOSTER	325.44	FOSTER-OUT = ["P_FOS"+"FO-OVF"]		0.55	0.55	74	1472.958211	0.5	0.5	FOSTER	P_FOS	FO-OVF	10.34	10	SN_FO (Total Flows at Foster Drain)	N_CE	159	0.0818	-645.23 -391.2 -91 -85.52 -15.46 -9.79 -3.22 3.22 10.96 16.44 26.55 29.03 35.76 36.67 108.08 109.82 112.04 114.62 116.76	91.5 91.5 91.5 91.5 89.4 89.31 88.24 85.07 85.79 86.49 89.45 90.27 90.67 91 91 90.5 90.5 91 91.5

File name:

Figure F2 - Foster Sub-catchment.pdf

Legend
Channel Cross Sections
SWMF Drains
Foster Drain
SWMF ponds
Foster Pond
Foster Sub-catchment
FOSTER
Google Hybrid

XS 6016 Cross Section at station 6016

FOSTER
325.44 ha
Ref. 1

Area ID
Area (ha)
Reference Number

J.F. Sabourin and Associates Inc.
WATER RESOURCES AND ENVIRONMENTAL CONSULTANTS
52 Springbrook Drive
Ottawa, ON, K2S 1B9
(613) 836-3884
www.jfsa.com

DSEL
david schaeffer engineering ltd

PROJECT :

BCDC - Quantity Control Study

TITLE :

Figure F2 - Foster Sub-catchment

Table F2 - Foster Sub-catchment

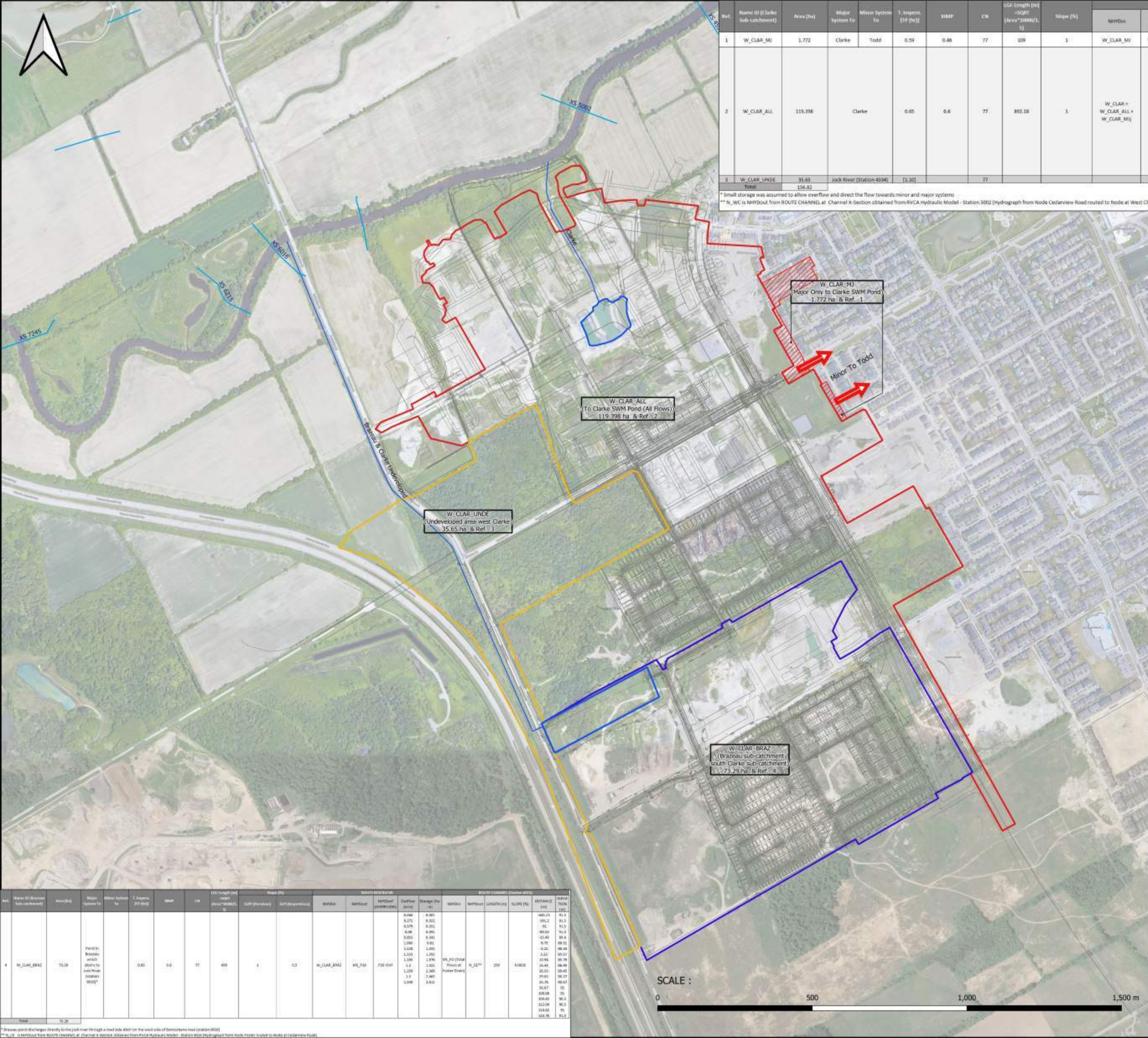
PROJECT NO.	1474-16
DRAWN:	MM
DATE:	Mar. 2021

Ref.	Name ID	Area (ha)	Major System To	Minor System To	T. Imperv.	XIMP	CN	LGI: Length (m) =SQRT (Area*10000/1.5)	Slope (%)		ROUTE RESERVOIR					ROUTE CHANNEL (Station 6016)					
									SLPP (Pervious)	SLPI (Impervious)	NHYDin	NHYDout	NHYDovf (OVERFLOW)	Outflow (cms)	Storage (ha-m)	NHYDin	NHYDout	LENGTH (m)	SLOPE (%)	DISTANCE (m)	ELEVATION (m)
1	FOSTER	325.44	FOSTER-OUT = ["P_FOS"+"FO-OVF"]		0.55	0.55	74	1472.956211	0.5	0.5	FOSTER	P_FOS	FO-OVF	10.34	10	SN_FO (Total Flows at Foster Drain)	N_CE	159	0.0818	-645.23	91.5
																				-391.2	91.5
																				-91	91.5
																				-85.52	91.5
																				-15.46	89.4
																				-9.79	89.31
																				-3.22	86.24
																				3.22	85.07
																				10.96	85.79
																				16.44	86.49
																				26.55	89.45
																				29.03	90.27
																				35.76	90.67
																				36.67	91
																				108.08	91
																				109.82	90.5
																				112.04	90.5
																				114.62	91
																				116.76	91.5

Ref.	Name ID (Clarke Sub-catchment)	Area (ha)	Major System To	Minor System To	T. Imperv. [TP (hr)]	XIMP	CN	LGI: Length (m) =SQRT (Area*10000/1.5)	Slope (%)	ROUTE RESERVOIR NHYDin	NHYDout	NHYDovf (OVERFLOW)	Outflow (cms)	Storage (ha m)	ROUTE CHANNEL (Station 4534) NHYDin	NHYDout	LENGTH (m)	SLOPE (%)	DISTANCE (m)	ELEVATION (m)
1	W_CLAR_MJ	1.772	Clarke	Todd	0.59	0.46	77	109	1	W_CLAR_MJ	W_CLAR_MJn	W_CLAR_MJj	0.213	0.0001*						
2	W_CLAR_ALL	119.398	Clarke		0.65	0.6	77	892.18	1	W_CLAR = W_CLAR_ALL + W_CLAR_MJ)	MS_P2	P2-OVF	0.128 0.138 0.148 0.227 0.354 0.505 0.666 0.831 0.995 1.069 1.51 4.904 13.048 23.745 36.474 45.938 61.652	0.161 0.409 0.68 0.931 1.223 1.52 1.821 2.123 2.434 2.583 2.647 2.861 3.188 3.523 3.871 4.127 4.539	N_WC**	N_KB	1020	0.0498	-1082.01 -1028.17 -992.3 -279.34 -23.63 -13.45 -0.07 10.54 23.63 24.86 26.72 45.07 128.17 270.7 728.3	94 92.5 93.5 90 90 87.13 86.24 87.15 90 90.5 91 91.5 91.5 92.5 95
3	W_CLAR_UNDE	35.65	Jock River (Station 4534)		[1.10]		77													
Total		156.82																		

* Small storage was assumed to allow overflow and direct the flow towards minor and major systems

** N_WC is NHYDout from ROUTE CHANNEL at Channel X-Section obtained from RVCA Hydraulic Model - Station 5002 (Hydrograph from Node Cedarview Road routed to Node at West Clarke Drain)



Ref.	Name ID (Brazeau Sub-catchment)	Area (ha)	Major System To	Minor System To	T. Imperv. [TP (hr)]	XIMP	CN	LGI: Length (m) =SQRT (Area*10000/1.5)	Slope (%) SLPP (Pervious)	SLPI (Impervious)	ROUTE RESERVOIR NHYDin	NHYDout	NHYDovf (OVERFLOW)	Outflow (cms)	Storage (ha m)	ROUTE CHANNEL (Station 6016) NHYDin	NHYDout	LENGTH (m)	SLOPE (%)	DISTANCE (m)	ELEVATION (m)
4	W_CLAR_BRAZ	73.29	Pond in Brazeau which drains to Jock River (station 6016)*		0.65	0.6	77	699	1	0.5	W_CLAR_BRAZ	MS_P10	P10-OVF	0.068 0.271 0.575 0.08 0.851 1.080 1.128 1.155 1.184 1.2 1.229 1.3 1.349	0.005 0.021 0.051 0.091 0.341 0.81 1.281 1.592 1.876 1.921 2.369 2.665 2.611	SN_FO (Total Flows at Foster Drain)	N_CE**	359	0.0818	-601.13 -391.2 -91 -85.02 -15.46 -6.75 -0.22 3.22 10.96 16.46 26.55 29.65 31.76 36.67 108.08 109.82 112.04 114.62 118.76	91.6 91.5 91.5 91.5 89.4 88.31 88.03 85.07 85.78 86.69 89.45 90.27 90.67 91 91 90.5 90.5 91 91.5
Total		73.29																			

* Brazeau pond discharges directly to the Jock river through a road side ditch on the west side of Borrisokane road (station 6016)

** N_CE is NHYDout from ROUTE CHANNEL at Channel X-Section obtained from RVCA Hydraulic Model - Station 6016 (Hydrograph from Node Foster routed to Node at Cedarview Road)

Legend

Channel Cross Sections

SWMF Drains
- Brazeau & Clarke Undeveloped
- Clarke

SWMF ponds
- West Clarke
- Brazeau

Clarke Sub-catchment & Brazeau Sub-catchment
- W_CLAR_MJ
- W_CLAR_MJ (Major Only to Clarke SWM Pond)
- W_CLAR_ALL
- W_CLAR_BRAZ
- W_CLAR_UNDE
- Clarke-Brazeau-CAD

Google Hybrid

File name:

Figure F3 - Clarke & Brazeau Sub-catchments.pdf

XS 4534 Cross Section at station 4534 — Minor System

W_CLAR_MJ → Area ID
(Major Only to Clarke SWM Pond) → Reference Number
1.772 ha & Ref. 1 → Area (ha)

J.F. Sabourin and Associates Inc.
WATER RESOURCES AND ENVIRONMENTAL CONSULTANTS
52 Springbrook Drive, Ottawa, ON, K2S 1B9
(613) 836-3884
www.jfsa.com

DSEL
david schaeffer engineering ltd

PROJECT : BCDC - Quantity Control Study

TITLE : Figure F3 - Clarke & Brazeau Sub-catchments

Table F3-1 - Clarke Sub-catchments

Figure F3-2 - Brazeau Sub-catchment

PROJECT NO.	1474-16
DRAWN:	MM
DATE:	Mar. 2021

Ref.	Name ID (Clarke Sub-catchment)	Area (ha)	Major System To	Minor System To	T. Imperv. [TP (hr)]	XIMP	CN	LGI: Length (m) =SQRT (Area*10000/1.5)	Slope (%)	ROUTE RESERVOIR					ROUTE CHANNEL (Station 4534)					
										NHYDin	NHYDout	NHYDovf (OVERFLOW)	Outflow (cms)	Storage (ha-m)	NHYDin	NHYDout	LENGTH (m)	SLOPE (%)	DISTANCE (m)	ELEVATION (m)
1	W_CLAR_MJ	1.772	Clarke	Todd	0.59	0.46	77	109	1	W_CLAR_MJ	W_CLAR_MJn	W_CLAR_MJj	0.213	0.0001*						
2	W_CLAR_ALL	119.398	Clarke		0.65	0.6	77	892.18	1	W_CLAR = W_CLAR_ALL + W_CLAR_MJj	MS_P2	P2-OVF	0.128	0.161						
													0.138	0.409	N_WC**	N_KB	1020	0.0498	-1082.01	94
													0.148	0.68					-1028.17	92.5
													0.227	0.931					-992.3	93.5
													0.354	1.223					-279.34	90
													0.505	1.52					-23.63	90
													0.666	1.821					-13.45	87.13
													0.831	2.123					-0.07	86.24
													0.995	2.434					10.54	87.15
													1.069	2.583					23.63	90
													1.51	2.647					24.86	90.5
													4.904	2.861					26.72	91
													13.048	3.188					45.07	91.5
													23.745	3.523					128.17	91.5
													36.474	3.871					270.7	92.5
													45.938	4.127					728.3	95
													61.652	4.539						
3	W_CLAR_UNDE	35.65	Jock River (Station		[1.10]		77													
Total		156.82																		

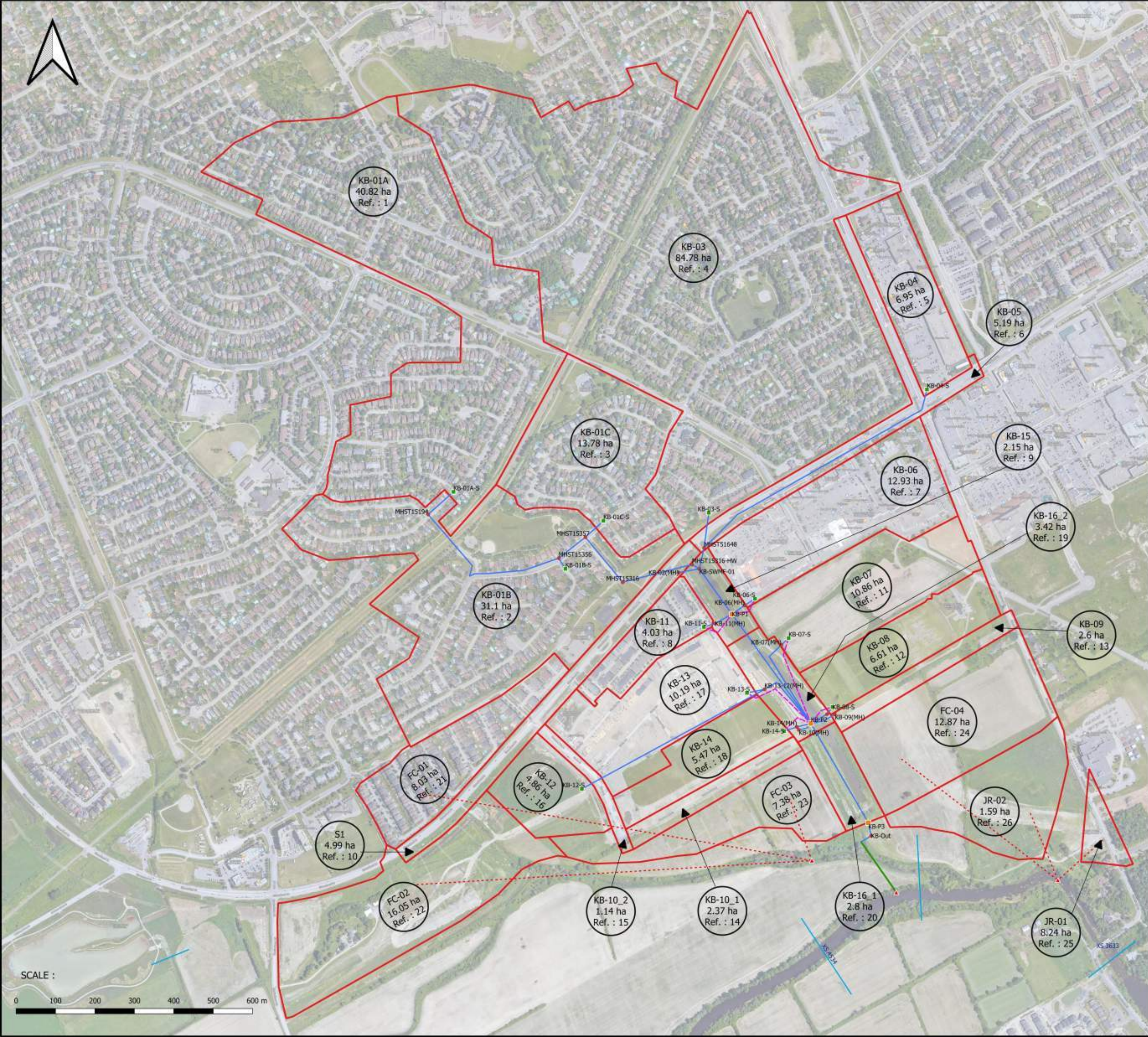
* Small storage was assumed to allow overflow and direct the flow towards minor and major systems

** N_WC is NHYDout from ROUTE CHANNEL at Channel X-Section obtained from RVCA Hydraulic Model - Station 5002 (Hydrograph from Node Cedarview Road routed to Node at West Clarke Drain)

Ref.	ID (Brazeau Sub-catchment)	Area (ha)	Major System To	Minor System To	T. Imperv. [TP (hr)]	XIMP	CN	LGI: Length (m) =SQRT (Area*10000/ 1.5)	Slope (%)		ROUTE RESERVOIR					ROUTE CHANNEL (Station 6016)					
									SLPP (Pervious)	SLPI (Impervious)	NHYDin	NHYDout	NHYDovf (OVERFLOW)	Outflow (cms)	Storage (ha-m)	NHYDin	NHYDout	LENGTH (m)	SLOPE (%)	DISTANCE (m)	ELEVATION (m)
4	W_CLAR_BRAZ	73.29	Pond in Brazeau which drains to Jock River (station 6016)*		0.65	0.6	77	699	1	0.5	W_CLAR_BRAZ	MS_P10	P10-OVF	0.068	0.001	SN_FO (Total Flows at Foster Drain)	N_CE**	159	0.0818	-645.23	91.5
														0.271	0.022					-391.2	91.5
														0.379	0.051					-91	91.5
														0.48	0.091					-85.52	91.5
														0.853	0.341					-15.46	89.4
														1.005	0.61					-9.79	89.31
														1.128	1.231					-3.22	86.24
														1.155	1.592					3.22	85.07
														1.194	1.876					10.96	85.79
														1.2	1.921					16.44	86.49
														1.259	2.369					26.55	89.45
														1.3	2.665					29.03	90.27
														1.349	2.813					35.76	90.67
																				36.67	91
																				108.08	91
																				109.82	90.5
																				112.04	90.5
																				114.62	91
																				116.76	91.5
Total		73.29																			

* Brazeau pond discharges directly to the jock river through a road side ditch on the west side of Borrisokane road (station 6016)

** N_CE is NHYDout from ROUTE CHANNEL at Channel X-Section obtained from RVCA Hydraulic Model - Station 6016 (Hydrograph from Node Foster routed to Node at Cedarview Road)



Legend

- Ken-BU storage
- Ken-BU MH
- Ken-BU Pond
- Ken-BU Outfalls
- Ken-BU Pipe
- Ken-BU Major System
- Ken-BU Channel
- Ken-BU to FC (Fraser Clarke) and JR(Jock River)

Kennedy Burnett Sub-catchment

Kennedy Burnett (Ken-BU)

Google Hybrid

File name:

Figure F4 - Kennedy Burnett Sub-catchments.pdf

XS 3633 Cross Section at station 3633

KB-01A
40.82 ha
Ref. : 1

Area ID

Area (ha)

Reference Number

J.F. Sabourin and Associates Inc.
WATER RESOURCES AND ENVIRONMENTAL CONSULTANTS
52 Springbrook Drive
Ottawa, ON, K2S 1B9
(613) 836-3884
www.jfsa.com

DSEL
david schaeffer engineering ltd

PROJECT :

BCDC - Quantity Control Study

TITLE :

Figure F4 - Kennedy Burnett Sub-catchments

Table F4 - Kennedy Burnett Sub-catchments

PROJECT NO.	1474
DRAWN:	MM
DATE:	Mar. 2021

Ref.	ID KENNEDY-BURNETT	Area (ha)	Runoff Coef. (1)	Zero Imperv (1) (%)	Slope (1) (%)	Equivalent Width (1) (m)	Flow Length (1) (m)	Percent Routed (1) (%) (Pervious)	TIMP (2)	XIMP (2)	LGI: Length (m) =SQRT (Area*10000/1.5)	SLPP (%)	SLPI (2) (%)	Minor System Criteria (1)	Major System Criteria (1)	Major and Minor System To	DUALHYD parameters: Major System	DUALHYD parameters: Minor System	DUALHYD parameters: Max. Release Rate (2) (cms)	DUALHYD parameters: Storage (2) (m^3)
											Existing Subcatchments to KB-SWMF									
1	KB-01A	40.82	0.49	50%	0.97%	1879	220	76%	0.408	0.09792	521.664	0.5	0.5	10 L/s/inlet & 15 L/s/inlet ICDs	No MS flows to KB-SWMF	KB-01A-S	KB-01A-MJ	KB-01A-MN	3.6	4995
2	KB-01B	31.1	0.46	50%	0.42%	312	1000	50%	0.375	0.1875	455.339	0.42	0.42	10 L/s/inlet & 15 L/s/inlet ICDs	No MS flows to KB-SWMF	KB-01B-S	KB-01B-MJ	KB-01B-MN	1.585	6075
3	KB-01C	13.78	0.49	50%	0.50%	403	335	50%	0.409	0.2045	303.095	2.0	0.5	10 L/s/inlet & 15 L/s/inlet ICDs	No MS flows to KB-SWMF	KB-01C-S	KB-01C-MJ	KB-01C-MN	1.35	1880
4	KB-03	84.78	0.48	50%	0.63%	647	1300	50%	0.394	0.197	751.798	2.0	0.63	10 L/s/inlet & 15 L/s/inlet ICDs	No MS flows to KB-SWMF	KB-03-S	KB-03-MJ	KB-03-MN	5.27	15500
5	KB-04	6.95	0.80	40%	0.50%	55	1265	100%	0.85	0.85	215.252	2.0	0.5	Controlled to 503 L/s (approx. 5-year inlet capture rate)	MS flows stored on-site	KB-04-S	KB-04-MJ	KB-04-MN	0.503	1972
6	KB-05	5.19	0.65	0%	2.00%	51	1000	100%	0.93	0.93	186.011	2.0	0.50	10-year inlet capture rate for storm sewers	MS flows to KB-SWMF	KB-P1				
7	KB-06	12.93	0.81	40%	4.75%	217	600	100%	0.873	0.873	293.598	2.0	4.75	Controlled to Qcap (1350mm) 1,760 L/s (approx. 5-year inlet capture rate)	MS flows stored on-site	KB-06-S	KB-06-MJ	KB-06-MN	2.262	1950
8	KB-11	4.03	0.67	50%	2.00%	116	350	100%	0.675	0.675	163.911	2.0	2.0	Controlled to 577 L/s (approx. 5-year inlet capture rate)	MS flows to KB-SWMF	KB-11-S	KB-11-MJ	KB-11-MN	0.577	597
9	KB-15	2.15	0.90	90%	0.30%	476	45	100%	0.79	0.79	119.722	2.0	0.3	Uncontrolled		KB-P1				
10	S1	4.99	0.65	0	0.02	50	1000	1	0.93	0.93	182.3915203	2	2	10-year inlet capture rate for storm sewers	MS flows to KB-SWMF	KB-P1				
20	KB-16_1	2.800	0.900	0.900	0.003	550.000	50.000	1.000	0.750	0.750	136.626	2.000	0.300	Uncontrolled		KB-P3				
19	KB-16_2	3.42	0.9	0.9	0.003	672	50	1	0.71	0.71	150.9966887	2	0.3	Uncontrolled		KB-P2				
											Proposed Subcatchments to KB-SWMF									
11	KB-07	10.86	0.8	0.5	0.02	209	525	1	0.86	0.86	269.072	2.0	2.0	5-year inlet capture rate (3-hour Chicago)	MS flows to KB-SWMF	KB-07-S	KB-07-MJ	KB-07-MN	2.094	1378
12	KB-08	6.61	0.65	0.5	0.02	133	500	1	0.64	0.64	209.921	2.0	2.0	5-year inlet capture rate (3-hour Chicago)	MS flows to KB-SWMF	KB-08-S	KB-08-MJ	KB-08-MN	1.058	787
13	KB-09	2.6	0.8	0	0.02	70	500	1	0.86	0.86	131.656	2.0	2.0	10-year inlet capture rate for storm sewers	MS flows to KB-SWMF	KB-P2				
14	KB-10_1	2.37	0.8	0	0.02	64	500	1	0.86	0.86	125.698	2.0	2.0	10-year inlet capture rate for storm sewers	MS flows to KB-SWMF	KB-P3				
15	KB-10_2	1.14	0.8	0	0.02	57	200	1	0.86	0.86	87.178	2.0	2.0	10-year inlet capture rate for storm sewers	MS flows to KB-SWMF	KB-P4				
16	KB-12	4.86	0.75	0.3	0.02	227	215	1	0.79	0.79	180.000	2.0	2.0	5-year inlet capture rate (3-hour Chicago)	MS flows to FC-Drain	KB-12-S	KB-12-MJ	KB-12-MN	0.8665	632
17	KB-13	10.19	0.65	50%	2.00%	227	450	100%	0.64	0.64	260.640	2.0	2.0	5-year inlet capture rate (3-hour Chicago)	MS flows to KB-SWMF	KB-13-S	KB-13-MJ	KB-13-MN	1.722	1077
18	KB-14	5.47	0.65	50%	2.00%	121	450	100%	0.64	0.64	190.962	2.0	2.0	5-year inlet capture rate (3-hour Chicago)	MS flows to KB-SWMF	KB-14-S	KB-14-MJ	KB-14-MN	0.8734	631
Existing and Proposed Subcatchments Total Area to KB-SWMF (ha)										257.04										
											EXISTING / PROPOSED SUBCATCHMENTS TO FRASER-CLARKE DRAIN									
21	FC-01	8.03	0.53						0.47	0.47	231.373	2.0	1.0	Controlled to 756 L/s	No MS flows to KB-SWMF	FC-01-S	FC-01-MJ	FC-01-MN	0.756	714
22	FC-02	16.05	0.85						0.93	0.93	327.109	2.0	1.0	5-year inlet capture rate (3-hour Chicago)	MS flows to FC-Drain	FC-02-S	FC-02-MJ	FC-02-MN	1.159	2385
23	FC-03	7.37	0.65						0.64	0.64	221.660	2.0	1.0	5-year inlet capture rate (3-hour Chicago)	MS flows to FC-Drain	FC-03-S	FC-03-MJ	FC-03-MN	0.358	1131
24	FC-04	12.87	0.65						0.64	0.64	292.916	2.0	1.0	5-year inlet capture rate (3-hour Chicago)	MS flows to FC-Drain	FC-04-S	FC-04-MJ	FC-04-MN	0.741	1794
Existing / Proposed Subcatchments Total Area to Fraser-Clarke Drain (ha)										44.32										
											PROPOSED SUBCATCHMENTS TO JOCK RIVER									
25	JR-01	8.24	0.65						0.64	0.64	234.379	2.0	1.0	5-year inlet capture rate (3-hour Chicago)	MS flows to JR River	JR-01-S	JR-01-MJ	JR-01-MN	0.563	1040
26	JR-02	1.59	0.65						0.64	0.64	102.956	2.0	1.0	5-year inlet capture rate (3-hour Chicago)	MS flows to JR River	JR-02-S	JR-02-MJ	JR-02-MN	0.153	153
Proposed Subcatchments Total Area to Jock River (ha)										9.83										

ROUTE RESERVOIR

NHYDin	NHYDout	NHYDovf (OVERFLOW)	Outflow (cms)	Storage (ha-m)
KB-P1 = ["KB-01A-S" + "KB-01B-S" + "KB-01C-S" + "KB-03-S" + "KB-04-S" + "KB-05" + "KB-06-S" + "KB-11-S" + "KB-15" +"S1"]	KB-P1R	KB-P1ovf	0.076	0.003
			0.088	0.006
			0.136	0.011
			0.301	0.017
			0.454	0.027
			0.631	0.041
			1.173	0.068
			1.91	0.111
			4.847	0.231
			9.813	0.436
			12.134	0.617
			12.438	0.732
			12.424	0.811
			12.425	0.894
KB-P3 = [KB-Pond2(4)+ KB-16_1]	KB-P3R	KB-P3ovf	0.051	0.002
			0.048	0.003
			0.057	0.029
			0.089	0.045
			0.133	0.069
			0.199	0.106
			0.321	0.172
			1.029	0.306
			4.036	0.527
			8.332	0.761
			11.727	0.941
			14.125	1.067
			15.675	1.149
			16.555	1.196
			16.911	1.214
KB-P2=["KB-Pond1(3)" + "KB-07-S"+ "KB-08-S"+ "KB-09"+ "KB-10_1"+ "KB-10_2"+ "KB-12-S"+ "KB-13-S"+ "KB-14-S" + "KB-16_2"]	KB-P2R	KB-P2ovf	0.053	0.005
			0.132	0.009
			0.269	0.014
			0.455	0.023
			0.699	0.037
			0.947	0.056
			1.853	0.09
			2.712	0.146
			6.626	0.287
			11.228	0.515
			14.885	0.738
			16.473	0.893
			17.311	0.998
			17.633	1.063
			17.634	1.112

ROUTE CHANNEL (Station 3633)

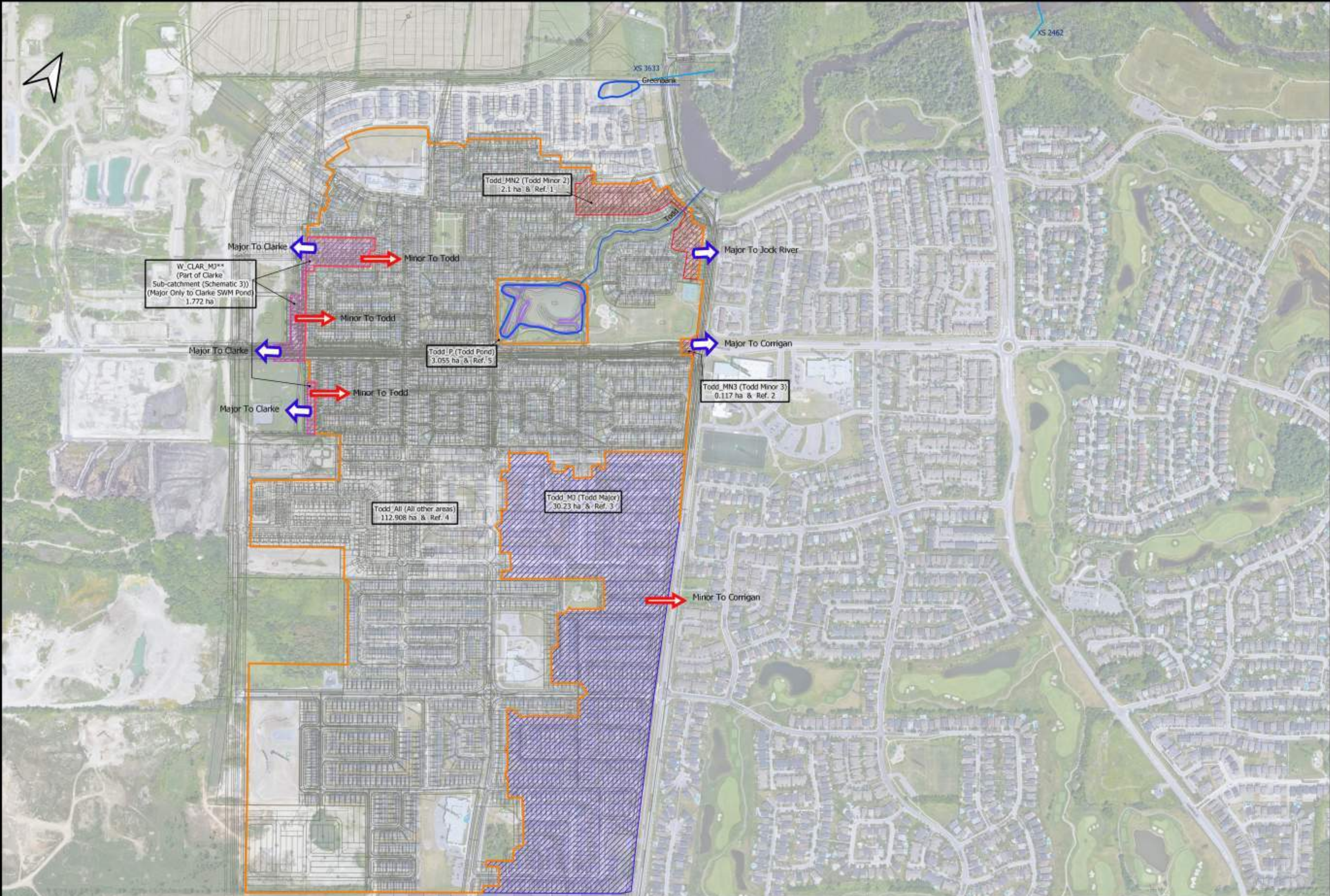
NHYDin	NHYDout	LENGTH (m)	SLOPE (%)	DISTANCE (m)	ELEVATION (m)
SN_KB (Total Flows before Station 3633)	N_TO	650	0.0498	-29.24	91
				-27.41	90.5
				-25.64	90
				-23.74	89.5
				-22	89.26
				-20	88.51
				-19	88.32
				-15	88.1
				-10	88.11
				-5	88.17
				0	88.27
				5	88.19
				10	88.06
				15	88.48
				16	88.7
				23.74	89.5
				24.68	90
				25.57	90.5
				26.5	91

(1) PCSWMM parameters as per KENNEDY-BURNETT STORMWATER MANAGEMENT FACILITY RETROFIT, DETAILED DESIGN REPORT, NOVATECH June, 2020

(2) SWMHYMO parameters as per JFSA P1474-16, Dec.,2020, the parameters are based on PCSWMM parameters as per KENNEDY-BURNETT STORMWATER MANAGEMENT FACILITY RETROFIT, DETAILED DESIGN REPORT, NOVATECH June, 2020

(3) KB-Pond1 = ["KB-P1R"+"KB-P1ovf"]

(4) KB-Pond2 = ["KB-P2R"+"KB-P2ovf"]



Ref.	Name ID (Todd)	Area (ha)	Major System To	Minor System To	T. Imperv.	XIMP	CN	USE Length (m) =SQRT (Area*10000/1.5)	Slope (%)	ROUTE RESERVOIR: NHYDin	NHYDout	NHYDovf (OVERFLOW)	Outflow (cms)	Storage (ha m)	ROUTE CHANNEL (Station 2462): NHYDin	NHYDout	LENGTH (m)	SLOPE (%)	DISTANCE (m)	ELEVATION (m)
1	TODD_MN2	2.1	Jock River (Station 2462)	Todd	0.57	0.53	77	118.322	1	TODD_MN2	TODD_MN2n	TODD_MN2j	0.268	0.0001*						
2	TODD_MN3	0.117	Corrigan	Todd	0.57	0.53	77	27.928	1	TODD_MN3	TODD_MN3n	TODD_MN3j	0.016	0.0001*						
3	TODD_MJ	30.23	Todd	Corrigan	0.64	0.52	77	448.925	1	TODD_MJ	TODD_MJn	TODD_MJj	3.314	0.0001*						
4	TODD_ALL	112.908	Todd	Todd	0.57	0.52	77	867.594	1											
5	TODD_P	3.055	Todd	Todd	0.63	0.63	77	142.712	1	"TODD" = ["TODD_MN2n"+ "TODD_MN3n"+ "TODD_MJj"+ "TODD_P"+ "TODD_ALL"+ "W_CLAR_Min"**]	M5_P3	P3-OVF	0.014 0.048 0.061 0.08 0.088 0.109 0.118 0.122 1.972 9.135 15.608 19.256 27.282 40.957 58.372 73.349 85.469 104.771	0.155 0.394 0.56 0.909 1.089 1.652 1.952 2.099 2.269 2.598 2.826 2.942 3.181 3.55 3.929 4.317 4.579 4.577	SN_TO = ["GreenB"(Greenbank Pond)+ "M5_P3"+"P3-OVF"+ "TODD_MN2j"+ "A2-MJ"***]	N_TO	280	0.033	-83.32 -81.36 -79.12 -76.13 -20.46 -19.36 -18.51 -17.72 -11.95 -0.11 11.49 17.72 19.74 21.22 22.68 24.28 26.79 71.98 80.62	90 89.5 89 88.5 88 87.5 87 86.5 85.24 85.12 85.2 86.5 87 87.5 88 88.5 89 90 90.5
Total		148.41																		

* Small storage was assumed to allow overflow and direct the flow towards minor and major systems

** "W_CLAR_Min" is the minor system from the major system area(Area = 1.772 ha & TIMP = 0.59 & XIMP = 0.46 & CN = 75 & Slope = 1% &Outflow = 0.213 cms)in Clarke sub-catchment (Schematic 3) to Jock River (Station 2462)

*** "A2-MJ" is the major system from A2 area (Area = 25.5 ha & TIMP = 0.52 & XIMP = 0.42 & CN = 75 & Slope = 1% & Storage = 924 cu-m & Flow rate = 1.818 cms) in Corrigan sub-catchment (Schematic 1) to Todd sub-catchment

Legend

- Channel Cross Sections
- SWMF Drains
- SWMF ponds
- Sub-catchments
  - Todd
  - Todd Minor
  - Todd Major
  - Todd Pond Boundary
  - W_CLAR_Major
- Todd-Greenbank-CAD
- Google Hybrid

File name: Figure F5 -Todd Sub-catchments.pdf

Major System — Minor System

XS 2462 — Cross Section at station 2462

Todd_P (Todd Pond) → Area ID; 3.055 ha & Ref. → Reference Number; → Area (ha)

J.F. Sabourin and Associates Inc.
WATER RESOURCES AND ENVIRONMENTAL CONSULTANTS
52 Springbrook Drive
Ottawa, ON, K2S 1B9
(613) 836-3884
www.jfsa.com

DSEL
david schaeffer engineering ltd

SCALE : 0 — 250 — 500 m

PROJECT : BCDC - Quantity Control Study

TITLE : Figure F5 -Todd Sub-catchments
Table F5 -Todd Sub-catchments

PROJECT NO.	1474-16
DRAWN:	MM
DATE:	Mar. 2021

Ref.	Name ID (Todd)	Area (ha)	Major System To	Minor System To	T. Imperv.	XIMP	CN	LGI: Length (m) =SQRT (Area*10000/1.5)	Slope (%)	ROUTE RESERVOIR					ROUTE CHANNEL (Station 2462)					
										NHYDin	NHYDout	NHYDovf (OVERFLOW)	Outflow (cms)	Storage (ha-m)	NHYDin	NHYDout	LENGTH (m)	SLOPE (%)	DISTANCE (m)	ELEVATION (m)
1	TODD_MN2	2.1	Jock River (Station 2462)	Todd	0.57	0.53	77	118.322	1	TODD_MN2	TODD_MN2n	TODD_MN2j	0.268	0.0001*						
2	TODD_MN3	0.117	Corrigan	Todd	0.57	0.53	77	27.928	1	TODD_MN3	TODD_MN3n	TODD_MN3j	0.016	0.0001*						
3	TODD_MJ	30.23	Todd	Corrigan	0.64	0.52	77	448.925	1	TODD_MJ	TODD_MJn	TODD_MJj	3.314	0.0001*						
4	TODD_ALL	112.908	Todd	Todd	0.57	0.52	77	867.594	1											
5	TODD_P	3.055	Todd	Todd	0.63	0.63	77	142.712	1	"TODD" = ["TODD_MN2n"+ "TODD_MN3n"+ "TODD_MJj"+ "TODD_P"+ "TODD_ALL"+ "W_CLAR_MJn"**]	MS_P3	P3-OVF	0.014 0.048 0.061 0.08 0.088 0.109 0.118 0.122 1.972 9.135 15.608 19.256 27.282 40.957 56.372 73.349 85.469 104.771	0.155 0.394 0.56 0.909 1.089 1.652 1.952 2.099 2.269 2.598 2.826 2.942 3.181 3.55 3.929 4.317 4.579 4.977	SN_TO = ["GreenB" (Greenbank Pond)+ "MS_P3"+"P3-OVF"+ "TODD_MN2j"+ "A2-MJ"***]	N_TO	280	0.033	-83.32 -81.36 -79.12 -76.13 -20.46 -19.36 -18.51 -17.72 -11.95 -0.11 11.49 17.72 19.74 21.22 22.68 24.28 26.79 71.98 80.62	90 89.5 89 88.5 88 87.5 87 86.5 85.24 85.12 85.2 86.5 87 87.5 88 88.5 89 90 90.5
Total		148.41																		

* Small storage was assumed to allow overflow and direct the flow towards minor and major systems

** "W_CLAR_MJn" is the minor system from the major system area(Area = 1.772 ha & TIMP = 0.59 & XIMP = 0.46 & CN = 75 & Slope = 1% &Outflow = 0.213 cms)in Clarke sub-catchment (Schematic 3) to Jock River (Station 2462)

*** "A2-MJ" is the major system from A2 area (Area = 25.5 ha & TIMP = 0.52 & XIMP = 0.42 & CN = 75 & Slope = 1% & Storage = 924 cu-m & Flow rate = 1.818 cms) in Corrigan sub-catchment (Schematic 1) to Todd sub-catchment

File name:

Figure F6 - Corrigan Sub-catchments.pdf

Major System

Overflow

Legend

Channel Cross Section

Corrigan-Pipe Line

Corrigan-MH

Corrigan Drainage Boundaries

Corrigan Drainage Boundaries

A1 15.75 ha Ref. : 1 — Area ID, Area (ha), Reference Number

XS 0 — Cross Section at station 0

J.F. Sabourin and Associates Inc.
WATER RESOURCES AND ENVIRONMENTAL CONSULTANTS
52 Springbrook Drive
Ottawa, ON, K2S 1B9
(613) 836-3884
www.jfsa.com

DSEL
david schaeffer engineering ltd

PROJECT :

BCDC - Quantity Control Study

TITLE :

Figure F6 - Corrigan Sub-catchments

Table F6 - Corrigan Sub-catchments

PROJECT NO.	1474
DRAWN:	MM
DATE:	Mar. 2021

Ref.	Area (ha)	ID Corrigan	T. Imperv. [TP (hr)]	XIMP	CN	LGI: Length (m) =SQRT (Area*10000 /1.5)	Slope (%)	Major System To	Minor System To	DUALHYD parameters					DIVERT HYD				ROUTE PIPE						ROUTE CHANNEL (Station) [ROUTE RESERVOIR]						
										NHYDin	MajNHYD	MinNHYD	Max. Release Rate (cms)	Storage (m^3)	NHYDin	outflow hydrographs (NHYDs)	NIDout	QTOTAL (cms)= QIDi + QIDii	NHYDin	NHYDout	Diameter (mm) [Height (mm)]	Width (mm)	LENGTH (m) with 0.013 Manning Coef.	SLOPE (m/m)	NHYDin	NHYDout	[NHYDovf]	LENGTH (m)	SLOPE (%)	DISTANCE (m) [Outflow (cms)]	ELEVATION (m) [Storage (ha-m)]
1	15.75	A1*	0.52*	0.42				MH101*	MH101*	A1-Corrig	A1-MJ	A1-MN	1.818	924					MH101= ["A1-MJ" +"A1-MN" +"corr1-MJ" +"corr1-MN" +"corr2"+"B1" +"A4-MN"]	101-102	1050		368	0.0054	Corrigan= ["116-corrig"+ "Pond-Block"]	Co-P	Co-P-OVF			[0.015]	[0.04118]
2	15.87	corr1	0.63	0.63	77	325.27	1	MH101*	MH101*																						
3	12.47	corr2	[1.10]		77			MH101*	MH101*																						
4	2.77	B1	[0.23]		56			N/A	MH101																					[0.03]	[0.08297]
5	1.27	A4	0.65	0.65	75	253	1	Half to Jock River and Half to B6 "B6-B7ExMJ"	MH101	A4	A4-MJ	A4-MN	0.405	68																[0.045]	[0.12537]
6	25.5	A2	0.52	0.42	75	566	1	"Todd" sub-catchment	MH102	A2	A2-MJ	A2-MN	1.818	924					MH102= ["A2-MN" +"101-102"]	102-103	1500		504	0.0028						[0.06]	[0.16837]
7	1.6	A5	0.71	0.71	75	300	1	Half to Jock River and Half to B6 "B6-B7ExMJ"	MH103	A5T=["A4-MJ"+"A5"]	A5-MJ	A5-MN	0.357	60																[0.075]	[0.21199]
8	1.56	A6	0.71	0.71	75	280	1	Half to Jock River and Half to B6 "B6-B7ExMJ"	MH104										MH103= ["102-103" +"A5-MN"]	103-104	1650		438	0.0046						[0.09]	[0.27545]
9	12.31	B2	0.54	0.41	75	417	1	"JOCKVA-TO" Jockvale sub-catchment	MH315	B2	B2-MJ	B2-MN	1.029	508					B2-MN	315-333	1200		254	0.001						[0.105]	[0.34650]
10	5.59	B3	0.54	0.41	75	345	1	"JOCKVA-TO" Jockvale sub-catchment	MH333	B3	B3-MJ	B3-MN	0.459	227					MH333= ["B3-MN" +"315-333"]	333-335	1200		251	0.001						[0.12]	[0.42049]
11	7.6	B4	0.54	0.41	75	388	1	"B7-B4MJ" B7 in Corrigan sub-catchment	MH340	B4	B5-MJ	B4-MN	0.655	323					333-335	335-338	1200		185	0.001						[0.135]	[0.50188]
12	2.2	B5	0.57	0.57	75	187	1	B6 "B6-B7ExMJ"	MH105	B5	B5-MJ	B4-MN	0.26	250		A8-MJ-JR			335-338	338-340	1350		233	0.001						[0.186]	[0.60307]
13	0.96	A8	0.71	0.71	75	186	1	Half to Jock River and Half to B6 "B6-B7ExMJ"	MH105	A8T=["A6-MJ"+"A8"]	A8-MJ	A8-MN	0.238	40	A8-MJ	A8-MJ-B6	2	100 = 50 + 50	MH340= ["338-340" +"B4-MN"]	340-104	1650		240	0.0015						[2.11]	[0.79083]
14	7.19	B7	0.54	0.41	75	211	1	B6 "B6-B7ExMJ"	MH360	B7-B4MJ=["B4-MJ"+"B7"]	B7R-MJ	B7R-MN	0.629	311	MH105= ["104-105"+ "B5-MN"+ "A8-MN"+ "TODD_MN3j"]	MH105-JR	2	3 = 0 + 3	MH104T= ["340-104" +"MH104"****]	104-105	[2100]	2400	380	0.001						[5.874]	[1.00271]
15	3.29	B6	0.54**	0.41	75	148.099	1	MH106A**	MH106A**	B6	B6-MJ	B6-MN	0.064	5484					B7R-MN	360-106A	1050		167	0.001						[11.395]	[1.29643]
16	32.54	Corrig-External ("EX-LAND" in SWMHYMO model)	0.5	0.5	74	465.475	1	B6 "B6-B7ExMJ"	"JOCKVA-TO" Jockvale sub-catchment	EX-LAND	EX-LAND-M	X-LAND-M	2.275	1365					MH105-B6	105-106A	1800		208	0.001						[18.77]	[1.62054]
17	2.44	A9	0.71	0.71	75	262	1	"corrig" to Jock River at Station 2462	MH106	B6-B7ExMJ=["B7R-MJ"+"EX-LAND-MJ"+"B5-MJ"+"B6-MJ"+"B6-MN"+"A8-MJ-B6"]	B6R-MJ	B6R-MN	0.064	5484					MH106A= ["360-106A" +"105-106A" +"B6R-MN" +"B6R-MJ"]	106A-106	1800		190	0.001						[28.143]	[1.97516]
18	4.14	A10	0.47	0.35	75	183	1	"corrig" to Jock River at Station 2463	MH107	A9	A9-MJ	A9-MN	0.547	0		MH105-B6		100 = 96.9 + 3.1(This value is obtained from Corrigan Report, IBI Group, 2008)	MH106= ["106A-106" +"A9-MN"]	106-107	1800		122.5	0.001	corrig= ["Co-P-OVF"+ "Co-P"+ "N_TO"+ "MH105-JR"+ "A8-MJ-JR"+ "A9-MJ"+ "A10-MJ"+ "A11-MJ"+ "A12-MJ"+ "A13-MJ"]	N_MI		580	0.4448	-83.32	90
19	10.61	A11	0.62	0.53	75	379	1	"corrig" to Jock River at Station 2464	MH107	A10	A10-MJ	A10-MN	0.31	228					MH107= ["106-107" +"A10-MN" +"A11-MN"]	107-119	1800		114	0.0012						-81.36	89.5
20	12.29	A12	0.54	0.41	75	183	1	"corrig" to Jock River at Station 2465	MH108	A11	A11-MJ	A11-MN	0.993	556					107-119	119-108	1800		65.8	0.0012						-79.12	89
21	2.59	A13	0.71	0.71	75	379	1	"corrig" to Jock River at Station 2466	MH108	A12	A12-MJ	A12-MN	1.029	672					MH108= ["119-108" +"A13-MN" +"A12-MN"]	108-116	1800		76.6	0.0013						-76.13	88.5
22	2.94	Corr Pond Block ("Pond-Block" in SWMHYMO model)	0.415***	0.41	75	183	1	N/A	"Corrigan" just before ROUTE RESERVOIR ***	A13	A13-MJ	A13-MN	0.571	0					108-116	116-corrig	1800		79.5	0.0013						-20.46	88
Total	183.48																													-19.36	87.5
																														-18.51	87
																														-17.72	86.5
																														-11.95	85.24
																														-0.11	85.12
																														11.49	85.2
																														17.72	86.5
																														19.74	87
																														21.22	87.5
																														22.68	88
																														24.28	88.5
																														26.79	89
																														71.98	90
																														80.62	90.5

*A1 is named as A1-Corrig in SWMHYMO Model to avoid name duplication. A1 was not developed in 2008 so it was NASHYD in Corrigan Report, IBI Group, 2008. After checking A1 from geoOttawa (https://maps.ottawa.ca/geoottawa/)in Jan. 2021, A1 is developed. Because of the lack of information, A1 parameters were taken as A2 parameters because A2 is the nearest sub-catchment to A1. Major and Minor systems go to MH101 because lacking information about where the major system should go.

**B6 was not developed in 2008 so it was NASHYD in Corrigan Report, IBI Group, 2008. After checking B6 from geoOttawa (https://maps.ottawa.ca/geoottawa/)in Jan. 2021, B6 is developed. Because of the lack of information, B6 parameters were taken as B7 parameters because B7 is the nearest sub-catchment to B6. Major and Minor systems go to MH106A because lacking information about where the major system should go.

*** 'Corr Pond Block' is added, Jan. 2021, because it was not included in Corrigan Report, IBI Group, 2008. TIMP calculation was based on the impervious area in 'Corr Pond Block'. TIMP = XIMP = 0.415. 'Corr Pond Block' drains to "Corrigan" just before Corrigan ROUTE RESERVOIR which is just before draining Corrigan sub-catchment to Jock River.

**** MH104=["A6-MN"+"103-104"+"TODD_MJn"(Minor of the Todd Major System goes to Corrigan)], TODD_MJ=30.230 ha, ROUTE RESERVOIR(OUTFLOW = 3.314 cms, STORAGE = 0.0001 ha-m, NHYDout=["TODD_MJn"] ,NHYDin=["TODD_MJ"], NHYDovf=["TODD_MJj"])

1. O'KEEFE MUNICIPAL DRAIN – APPOINTMENT OF ENGINEER

DRAIN MUNICIPAL O'KEEFE– NOMINATION D'UN INGÉNIEUR

COMMITTEE RECOMMENDATION

That Council appoint Mr. Andy Robinson, P. Eng of Robinson Consultants Inc. as the Engineer of record to prepare a report under Section 78 (1) of the *Drainage Act* to inform Council on the current status of the O'Keefe Municipal Drain and whether one or more of the projects listed under Section 78 (1.1) is required for the better use, maintenance or repair of the drainage works or lands or roads.

RECOMMANDATION DU COMITÉ

Que le Conseil nomme M. Andy Robinson, ing., de la firme Robinson Consultants Inc., comme ingénieur chargé de rédiger un rapport aux termes du paragraphe78(1) de la *Loi sur le drainage* afin de renseigner le Conseil sur l'état actuel du drain municipal O'Keefe et de lui indiquer si un ou plusieurs des projets énumérés au paragraphe 78(1.1) sont nécessaires pour faciliter l'utilisation, l'entretien ou la remise en état des installations de drainage, des terrains ou des routes.

.

Documentation/Documentation

1. Director's report, Parks, Forestry & Stormwater Services, dated April 30, 2021 (ACS2021-PWE-PFS-0005)

   Rapport de la Directrice, Services des parcs, de la foresterie et des eaux pluviales, daté le 30 juin 2021 (ACS2021-PWE-PFS-0005)

Report to
Rapport au:

Agriculture and Rural Affairs Committee
Comité de l'agriculture et des affaires rurales
3 June 2021 / 3 juin 2021

and Council
et au Conseil
9 June 2021 / 9 juin 2021

Submitted on April 30, 2021
Soumis le 30 avril 2021

Submitted by
Soumis par:
Allyson Downs, Director, Parks, Forestry & Stormwater Services / Directrice, Services des parcs, de la foresterie et des eaux pluviales

Contact Person
Personne ressource:
Dave Ryan, Drainage Superintendent
613-580-2424, x25106 David.Ryan@ottawa.ca

Ward: BARRHAVEN (3) **File Number**: ACS2021-PWE-PFS-0005

SUBJECT: O'Keefe Municipal Drain – Appointment of Engineer

OBJET: Drain municipal O'Keefe– Nomination d'un ingénieur

REPORT RECOMMENDATIONS

That the Agriculture and Rural Affairs Committee recommend that Council appoint Mr. Andy Robinson, P. Eng of Robinson Consultants Inc. as the Engineer of record to prepare a report under Section 78 (1) of the Drainage Act to inform

Council on the current status of the O’Keefe Municipal Drain and whether one or more of the projects listed under Section 78 (1.1) is required for the better use, maintenance or repair of the drainage works or lands or roads.

RECOMMANDATIONS DU RAPPORT

Que le Comité de l’agriculture et des affaires rurales recommande au Conseil de nommer M. Andy Robinson, ing., de la firme Robinson Consultants Inc., comme ingénieur chargé de rédiger un rapport aux termes du paragraphe78(1) de la *Loi sur le drainage* afin de renseigner le Conseil sur l’état actuel du drain municipal O’Keefe et de lui indiquer si un ou plusieurs des projets énumérés au paragraphe 78(1.1) sont nécessaires pour faciliter l’utilisation, l’entretien ou la remise en état des installations de drainage, des terrains ou des routes.

BACKGROUND

Development is proposed on multiple parcels of land within the existing watershed of the O’Keefe Municipal Drain which may result in changes in the land use, surface, subsurface and storm water flows from the existing parcels of land. The proposed developments are located in Part of Lots 14 and 15, Concession 4 former Township of Nepean, Barrhaven Ward.

A Drainage Engineer will be required to examine the proposed development within Part of Lots 14 and 15, Concession 4 former Township of Nepean, Barrhaven Ward, to determine the proposed changes to the extent and nature of use within the watershed of the O’Keefe Municipal Drain. An engineer’s report will be required in order to address any work required due to the potential improvements required to address the developer’s proposed changes.

The original O’Keefe Municipal Drain is located in Part Lots 14 to 20, Concession 4, former Township of Nepean, Barrhaven Ward and was first constructed in 1967 by the former Township of Nepean under the engineer’s report prepared by Graham, Berman and Associates Ltd. dated October 10, 1967 By-law 17-68. Modifications to the existing O’Keefe Municipal Drain by Robinson Consultants Inc. were adopted under engineer’s reports, the first modification dated March 2006 and By-law No. 2006-389, the second modification dated March 2015 and By-law No. 2016-149 and the third modification dated November 2018 and By-law No. 2019-281.

DISCUSSION

The O'Keefe Municipal Drain is a private communal drainage system which has legal status under the provincial *Drainage Act*, RSO 1990 c.17. As such, any changes to the drainage works requires the approval of Council based on the report of a qualified Drainage Engineer, pursuant to Section 78 of the *Act*. The City's Drainage Superintendent is recommending the appointment of Andy Robinson, P.Eng., a qualified Drainage Engineer from Robinson Consultants Inc., as the engineer of record as he has experience with similar *Drainage Act* projects, a specialized field of engineering in Ontario. He was also involved in the 2006, 2015 and 2018 Engineer's Reports on this drainage works.

This report has no tax or budget implications. All costs associated with the engineer's report will be initially paid by the Parks, Forestry and Stormwater Services Branch of the Public Works and Environmental Services Department but eventually recovered from the owners of land as determined by the Engineers' Report. The Engineers' Report will include an updated assessment for each parcel of land within the existing watershed of the O'Keefe Municipal Drain for a proportion of the costs of any drainage works projects that the drainage engineer determines is required under subsection 78 (1.1).

Under the *Drainage Act*, all lands that will benefit from the drainage works are assigned an assessment by the engineer. "Benefit" is defined under the *Drainage Act* as the advantages to any lands from the construction, improvement, repair or maintenance of a drainage works such as will result in a higher market value or increased crop production or improved appearance or better control of surface or subsurface water, or any other advantages relating to the betterment of the lands.

As such, the lands that benefit the most from improved drainage as a result of a Subsection 78 (1.1) project will be assessed a greater proportion of the costs of the project.

The estimated initial engineering cost of the report is $100,000. Until the costs are recovered from the owners of the assessed lands, all costs associated with the preparation of the engineer's report, engineering, administration, implementation and regulatory documentation required to complete any improvements recommended by the engineer and approved by Council, will be paid from the 2021 approved capital budget for the Municipal Drains Program for the cost of the engineer's report.

The *Drainage Act* prescribes the process and timelines to be followed for any variations in assessments within the Engineer's Report of an existing Petition Drain.

This report places the request for an Engineer's Report on the current status of the O'Keefe Municipal Drain and whether one or more of the projects listed under Section 78 (1.1) is required for the better use, maintenance or repair of the drainage works or lands or roads before the Agriculture and Rural Affairs Committee and Council as required under Section 78(1) of the *Drainage Act*.

RURAL IMPLICATIONS

The proposed development will benefit from this undertaking through the provision of legal and sufficient outlet, improved drainage and reduced risk of flooding.

CONSULTATION

Consultation with the Ward Councillor and City staff is ongoing.

COMMENTS BY THE WARD COUNCILLOR(S)

The Councillor is aware of this report.

LEGAL IMPLICATIONS

There are no legal impediments to Committee and Council's approval of the recommendation of this report.

RISK MANAGEMENT IMPLICATIONS

There are no risk implications associated with this report.

FINANCIAL IMPLICATIONS

This report has no tax or budget implications. The estimated initial cost of $100,000 for the Engineer's Report will be initially paid by the City of Ottawa, Parks, Forestry and Stormwater Services of the Public Works and Environmental Services Department and recovered, as per the assessment schedule included in the final Engineer's Report. Funds are available in the 2021 approved Capital Budget - Municipal Drainage Program.

ACCESSIBILITY IMPACTS

There are no accessibility impacts associated with this report.

ENVIRONMENTAL IMPLICATIONS

The modifications to the O'Keefe Municipal Drain are associated with proposed development. Any proposed works will require compliance with City, provincial and federal policies, standards, regulations and legislation.

TERM OF COUNCIL PRIORITIES

The recommendations of this report align with the current Strategic Priority as part of the sustainable environmental services strategic priority by supporting an environmentally sustainable Ottawa.

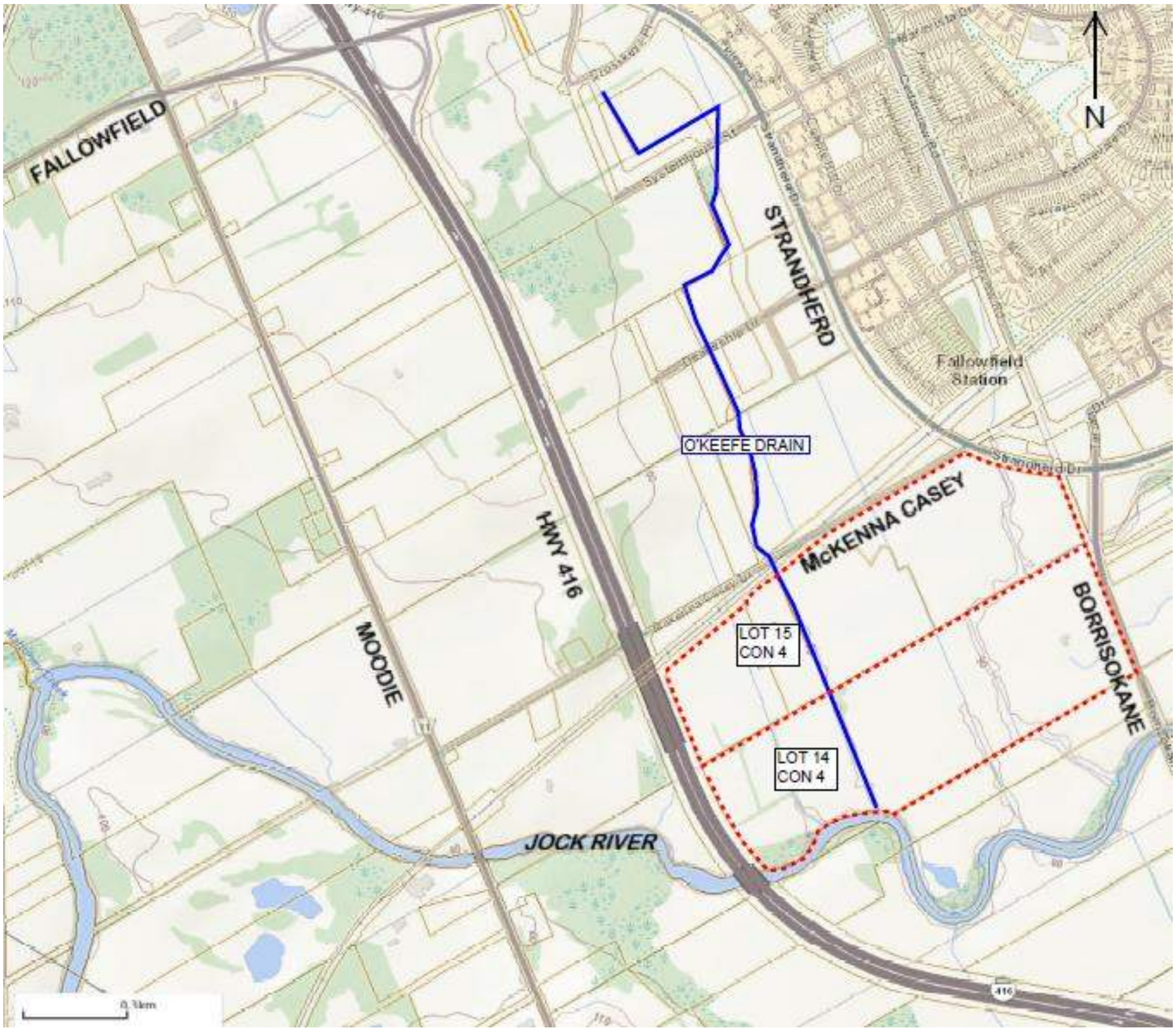
SUPPORTING DOCUMENTATION

DOCUMENT 1 – Location Plan

DISPOSITION

Once approved by Council, a separate new internal order will be created for this specific drain and all necessary funding will be transferred accordingly.

Document 1


FALLOWFIELD
STRANDHERD
N
Fallowfield Station
O'KEEFE DRAIN
McKENNA CASEY
HWY 416
MOODIE
BORRISOKANE
LOT 15 CON 4
LOT 14 CON 4
JOCK RIVER

J.F. Sabourin and Associates Inc.
52 Springbrook Drive,
Ottawa, ON K2S 1B9
T 613-836-3884 F 613-836-0332

jfsa.com

Ottawa. ON
Paris. ON
Gatineau. QC
Montréal. QC
Québec. QC

October 21, 2021 Project Number: 1474

David Schaeffer Engineering Ltd
120 Iber Road, Unit 103
Ottawa, Ontario
K2S 1E9

Attention: **Steve Pichette, P.Eng**

Subject: **BCD Phase 3 (Conservancy West) – Preliminary Water Balance**

Introduction

Phase 3 (Conservancy West) of the Barrhaven Conservancy Development is located in Barrhaven, Ontario, north of the Jock River, east of Highway 416 and west of the Foster Creek. The proposed development is approximately 35.6 ha that will primarily comprise of single and townhouse residential lots along with a 3.54 ha of parks. The following memo outlines how the proposed development will match/exceed the existing water budget through the use of LIDs.

Water Balance Overview

A pre-and post-development water balance has been completed for the site based on continuous hydrologic model simulations. As such a SWMHYMO model was developed that reflects the hydrologic conditions of these lands under pre-development, post-development without LIDs and post-development with LIDs conditions. These models were run using 36 years of hourly rainfall data from the Ottawa International Airport from 1967 to 2003 (excluding 2001 - missing rainfall data), the average annual runoff volumes from the subject site were computed and compared. Table A1 in Attachment A outlines the continuous modelling parameters for both pre and post-development conditions. The following section outlines the modelling approach for each scenario and the results of this analysis.

Pre-Development

Based on the Soil Survey Complex mapping from the Ontario Ministry of Agriculture, Food, and Rural Affairs (OMAFRA) the site primarily consists of Carsonby - Silt (Type C) and Brandon -Silty Clay- (Type D) Soils. This was confirmed by Paterson Groups through onsite field investigations and boreholes which also reported Silt and Silty Clays through the majority of the site.

Based on the Southern Ontario Land Resource Information System (SOLRIS) the site consists primarily of tilled lands and hedgerows. Based on the underlying Land Use Type and Soil Classification at each location within a subcatchment, a Curve Number (CN) was calculated, based on applicable values outlined in Tables A2 and A3 in the SWMHYMO Manual. Each Curve Number was then weighted based on the total area within the subcatchment to determine the weighted CN for that subcatchment. The CN value calculated was then converted to CN*, as CN* values have been shown to correlate well with measured flows and perform well in continuous SWMHYMO modelling (as discussed in the July 1989 INTERHYMO / OTTHYMO 89 Manual), when compared to conventional CN. Full details of the derivation of CN under existing conditions have been outlined in Table A2 and Figures A1 & A2 in Attachment A.

For this area, the time to peak has been calculated based on existing topography. Flow paths have been discretized based on the topographic data using GIS tools and the longest major flow path within the subcatchment identified; refer to Figure A3 in Attachment A for the flow paths discretized for these lands. The upstream and downstream topographic elevations and flow lengths were identified for this subcatchment and used in the calculations. For these lands, the Federal Aviation Administration (FFA) method was determined to be the most appropriate method to calculate the Time to Peak. Full details of these calculations have been provided in Table A3 in Attachment A, along with other time to peak values using alternative tp calculation methods. This site under pre-development conditions has been represented in SWMHYMO using a CONTINUOUS NASHYD command, with all continuous parameters outlined in Table A1 of Attachment A.

Post-Development – Without LIDs

Under post-development conditions, the site will have 4 individual storm sewer outlets, as such the development lands have been broken into these 4 discrete areas (with a total drainage area of 35.6 ha, matching existing conditions). Based on the development conceptual plan, the 35.6 ha site will have a total imperviousness of 64%, see figure A4 in Attachment A for an overview of the proposed development plan. These developed lands have been represented using CONTINUOUS STANDHYD commands in SWMHYMO, with City default Horton infiltration parameters for urban developments of F_o=76.2 mm/hr, F_c=13.2 mm/hr, DCAY=4.14 /hr, F=0 mm applied. This scenario has been provided to quantify the average annual reduction in infiltration volume throughout the site due to the increase in impervious area.

Post-Development – With LIDs

As mentioned above the proposed development will have LIDs implemented throughout the site to offset any deficit in annual infiltration volume produced by the increase in the impervious area due to the development. For this analysis, it is assumed that the development will have infiltration LIDs implemented at the road catch basins. Runoff captured by the road catch basins will be directed to an infiltration trench, where it can infiltrate before discharging to the storm sewer system (see *Figure 5* in DSEL *Figures & Drawings* package for more details about the proposed LID configuration). A conceptual design of these LIDs systems has been completed but will be refined at detailed design when detailed grading is available, to yield optimal benefit from this LID approach. Table 1 below outlines the parameters of these conceptual LIDs based on the current development plan. Each of the LID clusters have been represented in the model as single lumped ROUTE RESERVOIR commands, with the outflow of each command reflective of the soil infiltration rate and the volume reflective of the storage volume within each LID.

Soil Infiltration & Draw Down Time

Based on the Paterson Groups geotechnical Investigation, the site consists of soil that typically has infiltration rates in the range of 9 mm/hr - 25 mm/hr. As such it has been assumed that this site will have an infiltration rate of 9mm/hr with a safety factor of 2.5 (3.6 mm/hr). based on a trench height of 0.4m (with a void ratio of 0.4) these trenches will have a draw downtime of approximately 45 hours. Note that in this analysis it is assumed that only the bottom of the trench can infiltrate, which is a conservative assumption.

Table 1: Proposed LID Summary

Parameter	OGS W1	OGS W2	OGS W3	OGS W4
Area (ha)	8.92	8.22	9.9	8.6
Runoff Coefficient	0.65	0.65	0.65	0.65
Pipe Length (m)	1991	1896	1693	1693
Pipe Dia (mm)	250	250	250	250
Perf. Pipe Length (m)	1500	1440	1320	1320
Pipe Vol. (m^3)	73.6	70.7	64.8	64.8
Trench Width (m)	1.25	1.25	1.25	1.25
Trench Height (m)	0.4	0.4	0.4	0.4
Trench Length (m)	30	30	30	30
Void Ratio	0.4	0.4	0.4	0.4
Trench Vol. (m^3)	270.55	259.73	238.08	238.08
Total Vol. (m^3)	344	330	303	303
Area of Trench (m^2)	1875	1800	1650	1650
# of CB's	50	48	44	44
Soil Infiltration Rate (mm/hr)	9	9	9	9
Safety Factor	2.5	2.5	2.5	2.5
Reduced Rate (mm/hr)	3.6	3.6	3.6	3.6
Infiltration rate (m^3/hr)	0.001875	0.0018	0.00165	0.00165

Water Budget Scenario Summary

The models were run for 36 years using hourly rainfall data from the Ottawa Airport, and the annual evaporation, infiltration and runoff volumes calculated for each scenario. Tables 2-4 summarize the annual average water balance under existing conditions and post-development conditions for the proposed development lands with and without LID measures in place, as m³/year, mm/year and % of total annual rainfall.

Table 2:Pre-Development Water Balance

Drainage Area (ha)		35.64	Imperviousness:	7%
Annual Average Volume	Precipitation	Evapotranspira-tion	Runoff	Infiltration
m^3	212,328	121,651	14,501	76,176
mm	596	341	41	214
%	100%	57.3%	6.8%	35.9%

Table 3:Post Development Water Balance – Without LIDs

Drainage Area (ha)		35.64	Imperviousness:	64%
Annual Average Volume	Precipitation	Evapotranspira-tion	Runoff	Infiltration
m^3	212,328	77,264	88,035	47,029
mm	596	217	247	132
%	100.0%	36.4%	41.5%	22.1%

Table 4:Post Development Water Balance – With LIDs

Drainage Area (ha)		35.64	Imperviousness:	64%
Annual Average Volume	Precipitation	Evapotranspira-tion	Runoff	Infiltration
m^3	212,328	77,264	43,497	91,567
mm	596	217	122	257
%	100%	36.4%	20.5%	43.1%

Based on this analysis of pre-development conditions this site will evaporate 57.3%, runoff 6.8% and infiltrate 35.9% of all annual rainfall. Under Post-development conditions without LIDs, this site will evaporate 36.4%, runoff 41.5% and infiltrate 22.1% of all annual rainfall, resulting in a deficit of 82 mm/year infiltrated from pre-development conditions. Under post-development conditions with LIDs, this site will evaporate 36.4%, runoff 20.5% and infiltrate 43.1% and of all annual rainfall, resulting in an excess of 43 mm/year, exceeding existing pre-development infiltration rates. Full annual breakdowns of the three conditions have been provided in Attachment B, tables B1-B3. An average annual summary of the infiltration volume for each of the proposed LID measures is outlined in Table B4, which shows that the LIDs alone provide a total average annual infiltration volume of 125 mm/year.

Conclusion

A preliminary water balance analysis of the existing site was completed to determine pre-development infiltration rates, based on continuous hydrologic model simulations. A post-development analysis for the site, where no LIDs were implemented, showed that the volume of annual rainfall infiltrated would decrease by 82 mm/yr. (-38% from existing). Implementing LIDs in the way of infiltration trenches connected to the catchbasins would offset this deficit and exceed pre-development conditions by 43mm/year (+20% from existing). Based on the above it has been shown that Phase 3 of the Barrhaven Conservancy Development will be able to meet pre-development infiltration rates under post-development conditions through the use of LIDs.

Yours truly,
J.F Sabourin and Associates Inc.

Jonathon Burnett, P.Eng
Water Resources Engineer

cc: J.F Sabourin, M.Eng, P.Eng
Director of Water Resources Projects

LICENSED PROFESSIONAL ENGINEER
J. J. BURNETT
100227734
PROVINCE OF ONTARIO

Tables

Table 1: Proposed LID Summary
Table 2: Pre-Development Water Balance
Table 3: Post Development Water Balance – Without LIDs
Table 4 Post Development Water Balance – With LIDs

Attachments

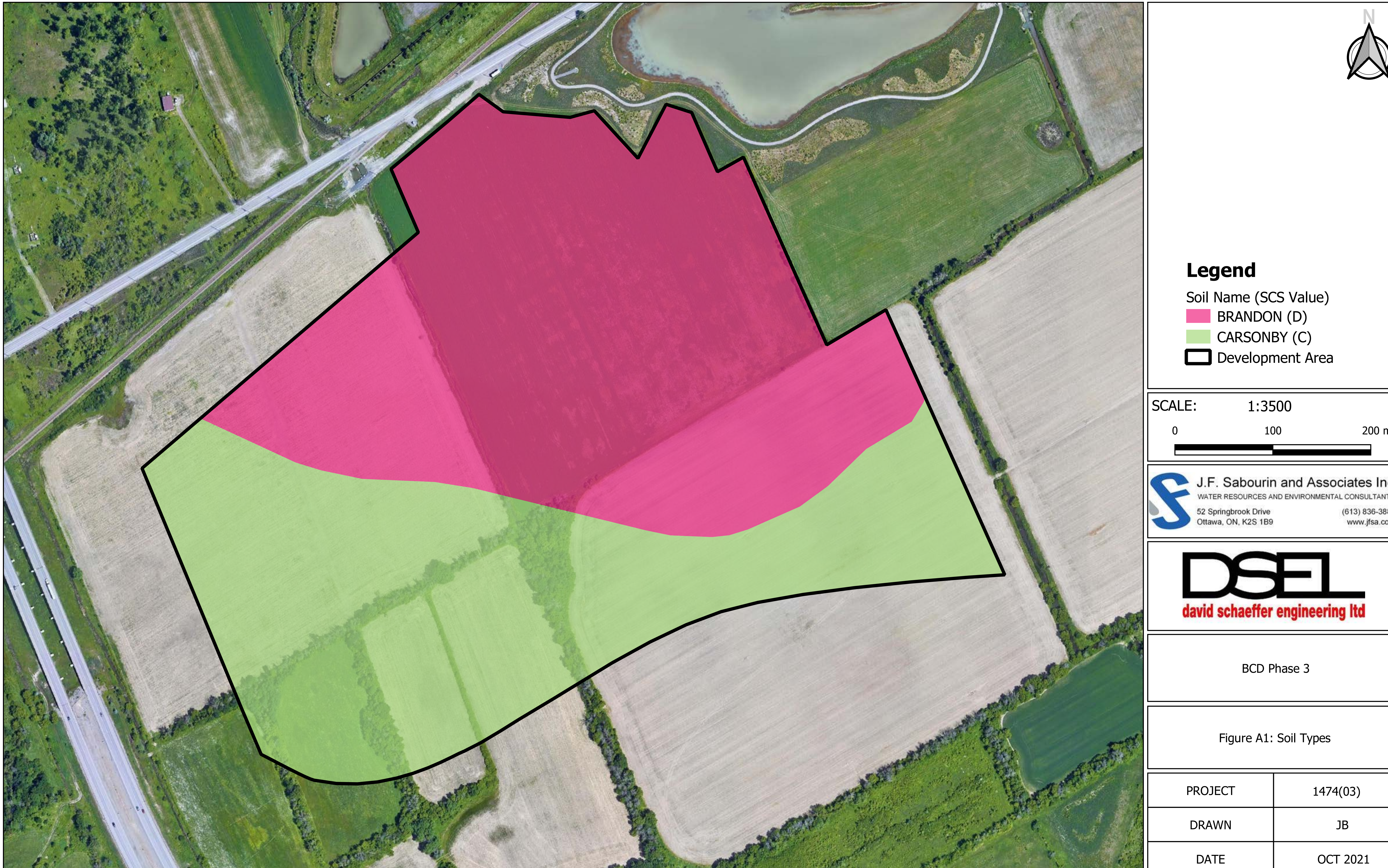
Attachment A: SWMHYMO Models & Parameters
Attachment B: Water Budget Results

J.F. Sabourin and Associates Inc.
52 Springbrook Drive,
Ottawa, ON K2S 1B9
T 613-836-3884   F 613-836-0332

jfsa.com

Attachment A

SWMHYMO Models & Parameters



SCALE: 1:3500

0 100 200 m

J.F. Sabourin and Associates Inc.
WATER RESOURCES AND ENVIRONMENTAL CONSULTANTS
52 Springbrook Drive
Ottawa, ON, K2S 1B9
(613) 836-3884
www.jfsa.com

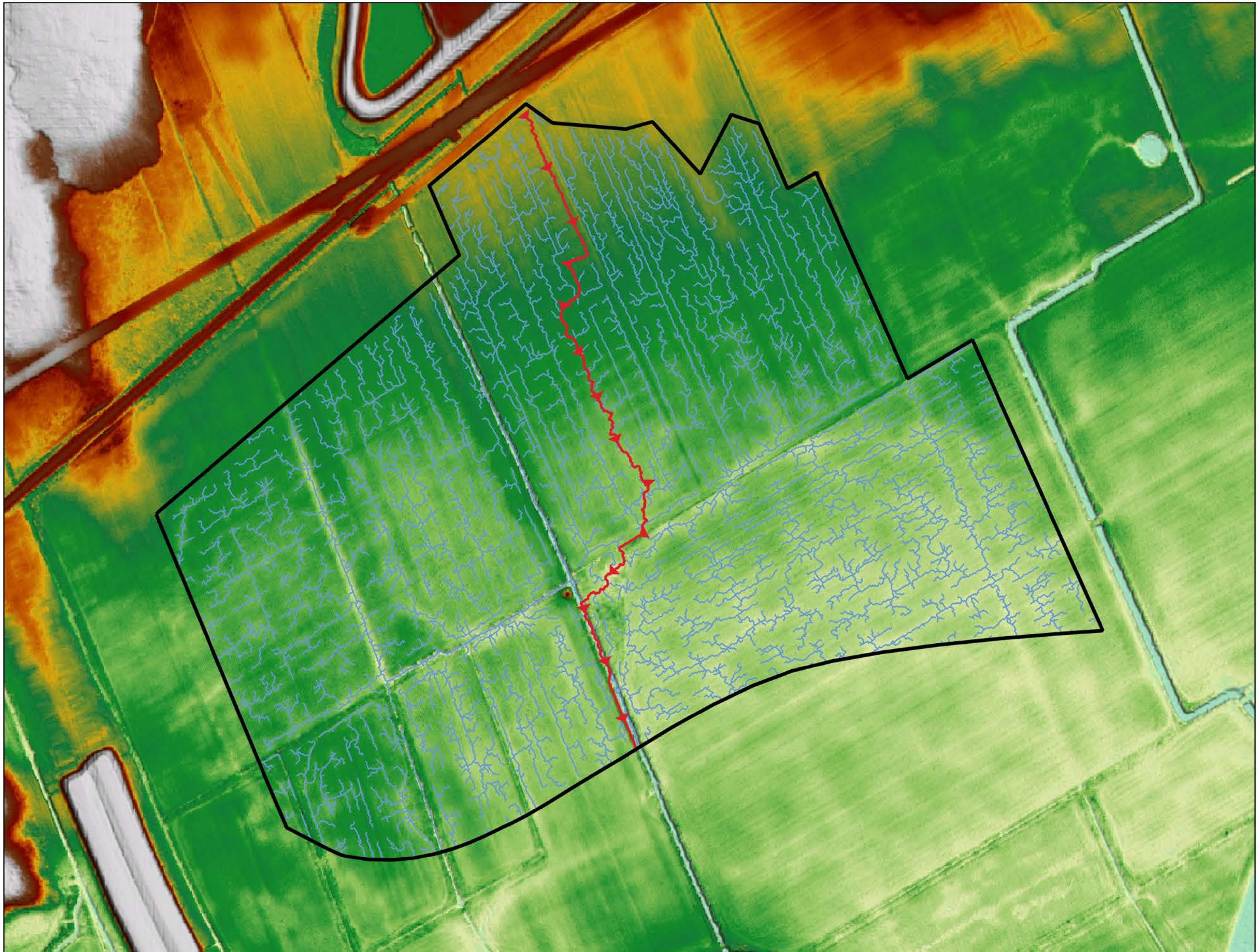
DSEL
david schaeffer engineering ltd

BCD Phase 3

Figure A1: Soil Types

PROJECT	1474(03)
DRAWN	JB
DATE	OCT 2021

C:\OneDrive\J.F. Sabourin and Associates Inc\JFSA-OTTAWA-SERVER - Documents\PROJ\1474(03)\202110-BCDC Phase 3 - Detailed Design\Design\GIS\20211018-Pre Dev Parameters



Legend

Major Flow Path

Streams

Terrain (m)

- 90.5
- 91
- 91.5
- 92
- 92.5
- 93
- 93.5
- 94
- 94.5

Development Area

SCALE: 1:3500

0 100 200 m

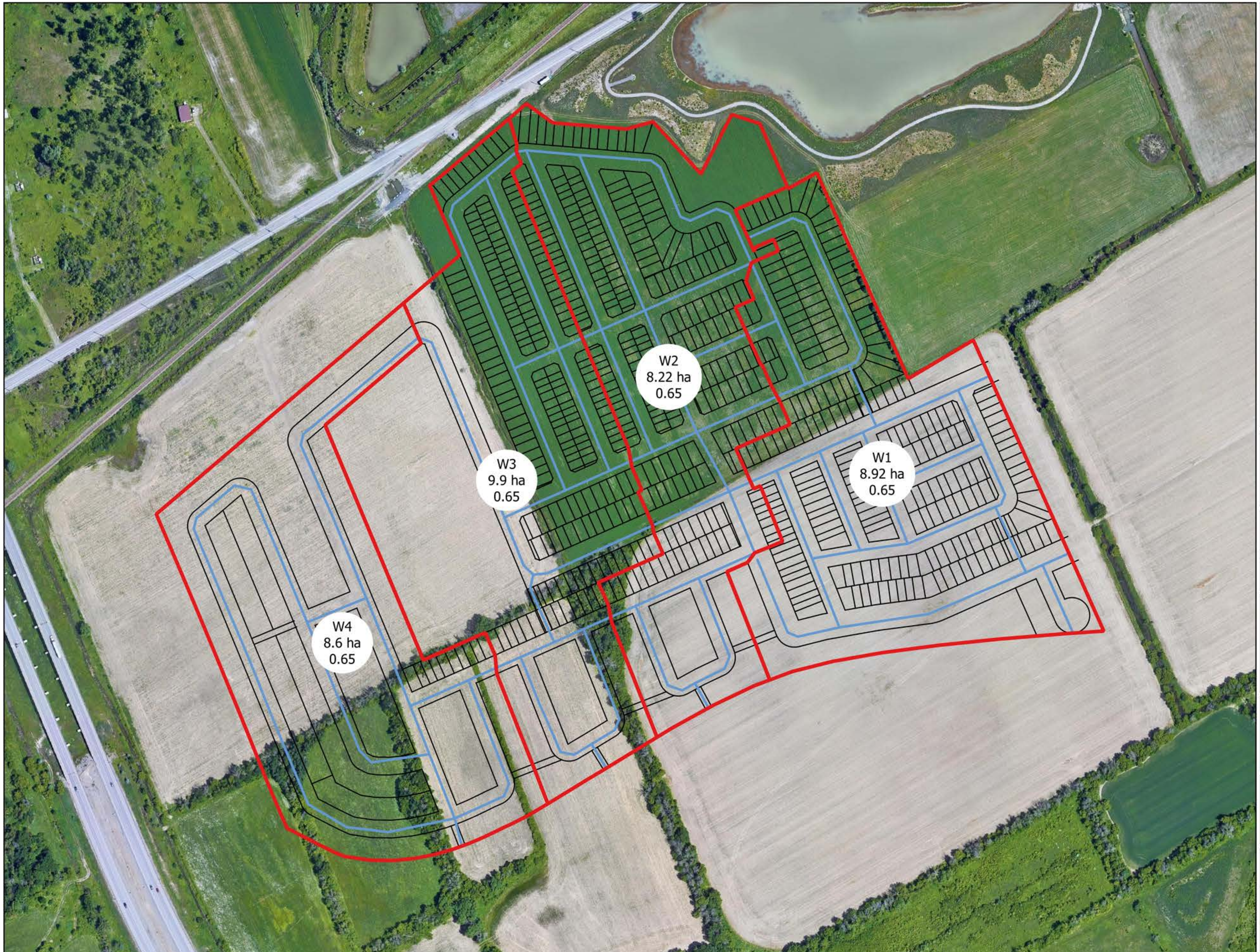
J.F. Sabourin and Associates Inc.
WATER RESOURCES AND ENVIRONMENTAL CONSULTANTS
52 Springbrook Drive
Ottawa, ON, K2S 1B9
(613) 836-3884
www.jfsa.com

DSEL
david schaeffer engineering ltd

BCD Phase 3

Figure A3: Flow Paths

PROJECT	1474(03)
DRAWN	JB
DATE	OCT 2021



Legend

- Site Plan
- Minor System
- Lumped Areas:
  <Name>
  <Area>
  <Runoff Coefficient>

SCALE: 1:3500

0 100 200 m

J.F. Sabourin and Associates Inc.
WATER RESOURCES AND ENVIRONMENTAL CONSULTANTS
52 Springbrook Drive
Ottawa, ON, K2S 1B9
(613) 836-3884
www.jfsa.com

DSEL
david schaeffer engineering ltd

BCD Phase 3

Figure A4: Proposed Development

PROJECT	1474(03)
DRAWN	JB
DATE	OCT 2021

C:\OneDrive\J.F. Sabourin and Associates Inc\JFSA-OTTAWA-SERVER - Documents\PROJ\1474(03)\202110-BCDC Phase 3 - Detailed Design\Design\GIS\20211018-Pre Dev Parameters

Table A1: Continuous Simulation Parameters

Parameter(s) & Value(s)	Description
APII=[50], APIK=[0.90]/day	Used to compute the Antecedent Precipitation Index during the continuous simulation. Without model calibration, these are the default values.
IAimp = [1.57](mm), IAper=[4.67](mm)	Default Initial Abstraction (IA) values per the City of Ottawa Design Guidelines
IaREC=[6](hrs);	The time that it takes for the Initial Abstraction over pervious areas to recover during a dry period in undeveloped areas.
SMIN=[-1], SMAX=[-1](mm)	The negative values indicate that the storage volume in the SCS procedure will vary between the "S" determined for AMC I and AMC III conditions of the entered CN value in undeveloped and urban areas.
SK=[0.03]/(mm);	A calibration coefficient that can typically vary from 0.01 to 0.3 for undeveloped and urban areas. The higher the value, the more runoff generated. To set the baseline for existing conditions, it was decided to take a value in the low range.
InitGWResVol=[10](mm), GWResK=[0.9](mm/day/mm), VhydCond=[1](mm/hr);	Parameters that are used to simulate both the groundwater storage and discharge to surface watercourses from undeveloped areas. Without adequate field measurements, these parameters were selected based on previous continuous modelling experience.
IaRECper=[6](hrs);	The time that it takes for the Initial Abstraction over pervious areas to recover during a dry period in urban areas.
IaRECimp=[1.5](hrs);	The time that it takes for the Initial Abstraction over impervious areas to recover during a dry period in urban areas.
InterEventTime=[12](hrs)	The continuous dry time is required to reset the parameters in the SCS procedure to their initial values.

Table A2: Calculation of SCS Curve Number (CN) and Modified Curve Number (CN*)

		EX (35.654 ha)							
Name	Total Area (ha)	Area (ha)	Land Type	Soil Name	Soil Condition	Soil Group	CN	% of Catchment	Weighted CN
EX	35.654	0.034	Hedge Rows	BRANDON	D	Fair	77	0.1%	0.1
EX	35.654	19.68	Tilled	BRANDON	D	Fair	84	55.2%	46.4
EX	35.654	1.767	Hedge Rows	CARSONBY	C	Fair	70	5.0%	3.5
EX	35.654	14.173	Tilled	CARSONBY	C	Fair	79	39.8%	31.4
								CN	**81.3**
								CN*	**74**

Table A3: Time to Peak Calculations

Parameter	Units	EX
Area	ha	35.65
CN*	-	74
Ptotal to calc C from CN, use 2 yr 12 hr SCS stom	P(mm)	43.2
	Ia(mm)	4.67
	RV(mm)	11.7
C	-	0.27
Length of Channel	m	832
	ft	2728
Elevation of Head Water	m	92.07
	ft	302
Elevation of Outlet	m	89.90
	ft	295
Average Slope	m/m	0.26%
	ft/ft	0.26%
Kirpich		
Time of Concentration	mins	34
Time to Peak	min	23
Time to Peak	Hours	0.38
FAA		
Time of Concentration	mins	122
Time to Peak	mins	81
Time to Peak	Hours	1.35
Barnsby Williams		
Time of Concentration	mins	44
Time to Peak	mins	29
Time to Peak	Hours	0.49
SCS		
Time of Concentration	mins	165
Time to Peak	mins	110
Time to Peak	Hours	1.83
Selected Method		
FAA		
Time to Peak	min	81
Time to Peak	Hours	1.35

Note:

All methods calculated as per Appendix A of the SWMHYMO manual

Time to Peak calculated as 2/3 Time of concentration

```
20     Metric units / ID Numbers OFF
*#***********************************************************************************************************************
*#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
*#***********************************************************************************************************************
*#  Project Name: Barrhaven Conservancy Development
*#  Project Number: 1474
*#  Date          : 2021/Oct/18
*#  Modeller      : J.Burnett, P.Eng.
*#  Company       : J.F. Sabourin and Associates
*#  License #     : 2582634
*#***********************************************************************************************************************
START               TZERO=[1967.0101],  METOUT=[2],  NSTORM=[0],  NRUN=[67]
*%                   [""] <--storm filename, one per line for NSTORM time
*%-----------------|----------------------------------------------------------------------------------------------------|
*# Ottawa International Airport (1967 - 2003)
READ AES DATA       AES_FILENAME=["YOW_1967_2007.123"],
                    IELEM=[123], START_DATE=[0], END_DATE=[-364]
*%-----------------|----------------------------------------------------------------------------------------------------|
COMPUTE API         APII=[50], APIK=[0.90]/day
*%-----------------|----------------------------------------------------------------------------------------------------|
*#***********************************************************************************************************************
*#                  Barrhaven Conservancy Development Phase 3 (WITH INFILTRATION) - PRE DEVELOPMENT CONDITIONS
*#***********************************************************************************************************************
*%-----------------|----------------------------------------------------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["EX"], DT=[5](min), AREA=[35.64](ha)
                    DWF=[0](cms),  CN/C=[52], IA=[4.67](mm), N=[3], TP=[1.35](hrs),
                    Continuous simulation parameters:
                      IaRECper=[6](hrs),SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.03]/(mm),
                      InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                      BaseFlowOption=[1] , InitGWResVol=[10](mm), GWResK=[0.9](mm/day/mm)
                      VHydCond=[1.0](mm/hr), END=-1
*%-----------------|----------------------------------------------------------------------------------------------------|
*#***********************************************************************************************************************
*#                  Barrhaven Conservancy Development Phase 3 (WITHOUT INFILTRATION) - PRE DEVELOPMENT CONDITIONS
*#***********************************************************************************************************************
*#                  Set infiltration to 0 (CN = 99.99) for water balance analysis
*#***********************************************************************************************************************
*%-----------------|----------------------------------------------------------------------------------------------------|
*%                  Drainage Area 1A
*%-----------------|----------------------------------------------------------------------------------------------------|
CONTINUOUS NASHYD   NHYD=["INF-EX"], DT=[5](min), AREA=[35.64](ha)
                    DWF=[0](cms),  CN/C=[99.999], IA=[4.67](mm), N=[3], TP=[1.35](hrs),
                    Continuous simulation parameters:
                      IaRECper=[6](hrs),SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.03]/(mm),
                      InterEventTime=[12](hrs)
                    Baseflow simulation parameters:
                      BaseFlowOption=[1] , InitGWResVol=[10](mm), GWResK=[0.9](mm/day/mm)
                      VHydCond=[1.0](mm/hr), END=-1
```

```
*%------------------|----------------------------------------------------------------------------------------------------|
*%------------------|----------------------------------------------------------------------------------------------------|
*################################################################################
*# CONTINUOUS RAINFALL DATA
*################################################################################
*%------------------|----------------------------------------------------------------------------------------------------|
*%------------------|----------------------------------------------------------------------------------------------------|
START               TZERO=[1968.0101],  METOUT=[2],  NSTORM=[0],  NRUN=[68]
*%------------------|----------------------------------------------------------------------------------------------------|
START               TZERO=[1969.0101],  METOUT=[2],  NSTORM=[0],  NRUN=[69]
*%------------------|----------------------------------------------------------------------------------------------------|
START               TZERO=[1970.0101],  METOUT=[2],  NSTORM=[0],  NRUN=[70]
*%------------------|----------------------------------------------------------------------------------------------------|
START               TZERO=[1971.0101],  METOUT=[2],  NSTORM=[0],  NRUN=[71]
*%------------------|----------------------------------------------------------------------------------------------------|
START               TZERO=[1972.0101],  METOUT=[2],  NSTORM=[0],  NRUN=[72]
*%------------------|----------------------------------------------------------------------------------------------------|
START               TZERO=[1973.0101],  METOUT=[2],  NSTORM=[0],  NRUN=[73]
*%------------------|----------------------------------------------------------------------------------------------------|
START               TZERO=[1974.0101],  METOUT=[2],  NSTORM=[0],  NRUN=[74]
*%------------------|----------------------------------------------------------------------------------------------------|
START               TZERO=[1975.0101],  METOUT=[2],  NSTORM=[0],  NRUN=[75]
*%------------------|----------------------------------------------------------------------------------------------------|
START               TZERO=[1976.0101],  METOUT=[2],  NSTORM=[0],  NRUN=[76]
*%------------------|----------------------------------------------------------------------------------------------------|
START               TZERO=[1977.0101],  METOUT=[2],  NSTORM=[0],  NRUN=[77]
*%------------------|----------------------------------------------------------------------------------------------------|
START               TZERO=[1978.0101],  METOUT=[2],  NSTORM=[0],  NRUN=[78]
*%------------------|----------------------------------------------------------------------------------------------------|
START               TZERO=[1979.0101],  METOUT=[2],  NSTORM=[0],  NRUN=[79]
*%------------------|----------------------------------------------------------------------------------------------------|
START               TZERO=[1980.0101],  METOUT=[2],  NSTORM=[0],  NRUN=[80]
*%------------------|----------------------------------------------------------------------------------------------------|
START               TZERO=[1981.0101],  METOUT=[2],  NSTORM=[0],  NRUN=[81]
*%------------------|----------------------------------------------------------------------------------------------------|
START               TZERO=[1982.0101],  METOUT=[2],  NSTORM=[0],  NRUN=[82]
*%------------------|----------------------------------------------------------------------------------------------------|
START               TZERO=[1983.0101],  METOUT=[2],  NSTORM=[0],  NRUN=[83]
*%------------------|----------------------------------------------------------------------------------------------------|
START               TZERO=[1984.0101],  METOUT=[2],  NSTORM=[0],  NRUN=[84]
*%------------------|----------------------------------------------------------------------------------------------------|
START               TZERO=[1985.0101],  METOUT=[2],  NSTORM=[0],  NRUN=[85]
*%------------------|----------------------------------------------------------------------------------------------------|
START               TZERO=[1986.0101],  METOUT=[2],  NSTORM=[0],  NRUN=[86]
```

```
*%-----------------|---------------------------------------------------------------------------------------------------|
START                   TZERO=[1987.0101],  METOUT=[2],  NSTORM=[0],  NRUN=[87]
*%-----------------|---------------------------------------------------------------------------------------------------|
START                   TZERO=[1988.0101],  METOUT=[2],  NSTORM=[0],  NRUN=[88]
*%-----------------|---------------------------------------------------------------------------------------------------|
START                   TZERO=[1989.0101],  METOUT=[2],  NSTORM=[0],  NRUN=[89]
*%-----------------|---------------------------------------------------------------------------------------------------|
START                   TZERO=[1990.0101],  METOUT=[2],  NSTORM=[0],  NRUN=[90]
*%-----------------|---------------------------------------------------------------------------------------------------|
START                   TZERO=[1991.0101],  METOUT=[2],  NSTORM=[0],  NRUN=[91]
*%-----------------|---------------------------------------------------------------------------------------------------|
START                   TZERO=[1992.0101],  METOUT=[2],  NSTORM=[0],  NRUN=[92]
*%-----------------|---------------------------------------------------------------------------------------------------|
START                   TZERO=[1993.0101],  METOUT=[2],  NSTORM=[0],  NRUN=[93]
*%-----------------|---------------------------------------------------------------------------------------------------|
START                   TZERO=[1994.0101],  METOUT=[2],  NSTORM=[0],  NRUN=[94]
*%-----------------|---------------------------------------------------------------------------------------------------|
START                   TZERO=[1995.0101],  METOUT=[2],  NSTORM=[0],  NRUN=[95]
*%-----------------|---------------------------------------------------------------------------------------------------|
START                   TZERO=[1996.0101],  METOUT=[2],  NSTORM=[0],  NRUN=[96]
*%-----------------|---------------------------------------------------------------------------------------------------|
START                   TZERO=[1997.0101],  METOUT=[2],  NSTORM=[0],  NRUN=[97]
*%-----------------|---------------------------------------------------------------------------------------------------|
START                   TZERO=[1998.0101],  METOUT=[2],  NSTORM=[0],  NRUN=[98]
*%-----------------|---------------------------------------------------------------------------------------------------|
START                   TZERO=[1999.0101],  METOUT=[2],  NSTORM=[0],  NRUN=[99]
*%-----------------|---------------------------------------------------------------------------------------------------|
START                   TZERO=[2000.0101],  METOUT=[2],  NSTORM=[0],  NRUN=[100]
*%-----------------|---------------------------------------------------------------------------------------------------|
*% MISSING FROM AES RAINFALL DATA
*%START                   TZERO=[2001.0101],  METOUT=[2],  NSTORM=[0],  NRUN=[101]
*%-----------------|---------------------------------------------------------------------------------------------------|
START                   TZERO=[2002.0101],  METOUT=[2],  NSTORM=[0],  NRUN=[102]
*%-----------------|---------------------------------------------------------------------------------------------------|
START                   TZERO=[2003.0101],  METOUT=[2],  NSTORM=[0],  NRUN=[103]
*%-----------------|---------------------------------------------------------------------------------------------------|
FINISH
```

```
 ========================================================================================

 SSSSS   W   W   M   M   H   H   Y   Y   M   M    OOO         222     000    11   5555   =========
 S       W W W   MM MM   H   H    Y Y    MM MM   O   O          2    0   0   11   5
 SSSSS   W W W   M M M   HHHHH     Y     M M M   O   O          2    0   0   11   5      Ver 5.500
     S    W W    M   M   H   H     Y     M   M   O   O        222    0   0   11   555    FEB  2015
 SSSSS    W W    M   M   H   H     Y     M   M    OOO         2      0   0   11      5   =========
                                                              2      0   0   11      5   # 2549237
       StormWater Management HYdrologic Model                 222     000    11   555    =========

 ****************************************************************************************
 **************************************  SWMHYMO Ver 5.500  ******************************
 ******************  A single event and continuous hydrologic simulation model  **********
 ******************     based on the principles of HYMO and its successors      **********
 ******************                 OTTHYMO-83 and OTTHYMO-89.                  **********
 ****************************************************************************************
 ****************** Distributed by:  J.F. Sabourin and Associates Inc.          **********
 ******************                  Ottawa,  Ontario: (613) 836-3884           **********
 ******************                  Gatineau, Quebec: (819) 243-6858           **********
 ******************                  E-Mail: swmhymo@jfsa.Com                   **********
 ****************************************************************************************

 ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
 ++++++++++++++++++ Licensed user: JFSAinc.                                   ++++++++++
 ++++++++++++++++++               Ottawa               SERIAL#:2549237        ++++++++++
 ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

 ****************************************************************************************
 ******************           ++++++ PROGRAM ARRAY DIMENSIONS ++++++           **********
 ******************           Maximum value for ID numbers  :     11           **********
 ******************           Max. number of rainfall points: 105408           **********
 ******************           Max. number of flow points    : 105408           **********
 ****************************************************************************************


 ********************************   S U M M A R Y   O U T P U T   **********************
 ****************************************************************************************
 *                 RUN DATE: 2021-10-19     TIME: 08:49:46     RUN COUNTER: 006017        *
 ****************************************************************************************
 * Input   file: C:\Temp\20210930-Water Budget\20210930-Pre-Dev\BCD_PH3-PRE_v01.dat       *
 * Output  file: C:\Temp\20210930-Water Budget\20210930-Pre-Dev\BCD_PH3-PRE_v01.out       *
 * Summary file: C:\Temp\20210930-Water Budget\20210930-Pre-Dev\BCD_PH3-PRE_v01.sum       *
 * User comments:                                                                         *
 * 1:_____________________________________________________________________________________*
 * 2:_____________________________________________________________________________________*
 * 3:_____________________________________________________________________________________*
 ****************************************************************************************


#*******************************************************************************************************
#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
#*******************************************************************************************************
#  Project Name: Barrhaven Conservancy Development
#  Project Number: 1474
#  Date         : 2021/Oct/18
#  Modeller     : J.Burnett, P.Eng.
#  Company      : J.F. Sabourin and Associates
#  License #    : 2582634
#*******************************************************************************************************
  ** END OF RUN :   66

*****************************************************************************************





 RUN#:COMMAND#
R0067:C00001------------------------------------------------------------------------------------
     START
      [TZERO =    .00 hrs on 19670101]
      [METOUT=   2    (1=imperial, 2=metric output)]
      [NSTORM=   0 ]
      [NRUN  = 0067 ]
#*******************************************************************************************************
#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
#*******************************************************************************************************
#  Project Name: Barrhaven Conservancy Development
#  Project Number: 1474
#  Date         : 2021/Oct/18
#  Modeller     : J.Burnett, P.Eng.
#  Company      : J.F. Sabourin and Associates
#  License #    : 2582634
#*******************************************************************************************************
# Ottawa International Airport (1967 - 2003)
R0067:C00002------------------------------------------------------------------------------------
  *  READ AES DATA
      [Filename  = YOW_1967_2007.123                                                ]
      [Start_date= 1967.0101: End_date= 1967.1231]
      {DT= 60.min: Length= 3984.hrs: WetHrs=  257: DryHrs= 3727: PTOT= 386.90}
      Maximum average rainfall intensities over
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
       24.60    17.65    13.20     7.25     3.83     2.36     1.73     1.32      .90    mm/hr
       24.60    35.30    39.60    43.50    46.00    56.60    62.30    63.20    64.90    mm
      19670921 19670921 19670921 19670921 19670921 19670922 19670922 19670923 19670924  date
      Number of rainfall events per following interevent time
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
          80       65       56       40       32       29       24       20       18
      Number of events with at least the following durations
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
          79       42       29       14        3        0        0        0        0
R0067:C00003------------------------------------------------------------------------------------
     COMPUTE API
      [APIini= 50.00: APIkdy= .9000: APIkdt= .9956]
      {APImax= 76.77: APIavg= 24.81: APImin=  3.06}
#*******************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITH INFILTRATION) - PRE DEVELOPMENT CONDITIONS
#*******************************************************************************************************
R0067:C00004------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     5.0 01:EX            35.64     .176 1967.0921_19:25   36.37 .094     .000
      [CN= 52.0: N= 3.00: Tp= 1.35]
      [IaREC= 6.00: SMIN= 95.25: SMAX=635.00: SK= .030]
      [InterEventTime=  12.00]
#*******************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITHOUT INFILTRATION) - PRE DEVELOPMENT CONDITIONS
#*******************************************************************************************************
#                  Set infiltration to 0 (CN = 99.99) for water balance analysis
#*******************************************************************************************************
R0067:C00005------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     5.0 01:INF-EX        35.64    1.021 1967.0921_18:35  190.21 .492     .000
      [CN=100.0: N= 3.00: Tp= 1.35]
      [IaREC= 6.00: SMIN=  1.39: SMAX=  9.24: SK= .030]
      [InterEventTime=  12.00]
################################################################################
# CONTINUOUS RAINFALL DATA
################################################################################
  ** END OF RUN :   67

*****************************************************************************************





 RUN#:COMMAND#
R0068:C00001------------------------------------------------------------------------------------
     START
      [TZERO =    .00 hrs on 19680101]
      [METOUT=   2    (1=imperial, 2=metric output)]
      [NSTORM=   0 ]
      [NRUN  = 0068 ]
#*******************************************************************************************************
#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
#*******************************************************************************************************
#  Project Name: Barrhaven Conservancy Development
#  Project Number: 1474
#  Date         : 2021/Oct/18
#  Modeller     : J.Burnett, P.Eng.
#  Company      : J.F. Sabourin and Associates
#  License #    : 2582634
#*******************************************************************************************************
# Ottawa International Airport (1967 - 2003)
R0068:C00002------------------------------------------------------------------------------------
  *  READ AES DATA
      [Filename  = YOW_1967_2007.123                                                ]
      [Start_date= 1968.0101: End_date= 1968.1230]
      {DT= 60.min: Length= 8760.hrs: WetHrs=  413: DryHrs= 8347: PTOT= 592.80}
      Maximum average rainfall intensities over
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
       33.30    17.05    11.37     6.23     3.74     1.87     1.26      .95      .70    mm/hr
       33.30    34.10    34.10    37.40    44.90    44.90    45.40    45.40    50.20    mm
      19680817 19680817 19680817 19680808 19680817 19680818 19680817 19680808 19680820  date
      Number of rainfall events per following interevent time
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         137      105       93       84       72       63       48       43       36
      Number of events with at least the following durations
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         136       76       49       18        5        0        0        0        0
R0068:C00003------------------------------------------------------------------------------------
     COMPUTE API
      [APIini= 50.00: APIkdy= .9000: APIkdt= .9956]
      {APImax= 67.52: APIavg= 16.74: APImin=   .27}
#*******************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITH INFILTRATION) - PRE DEVELOPMENT CONDITIONS
#*******************************************************************************************************
R0068:C00004------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     5.0 01:EX            35.64     .167 1968.0817_ 6:10   38.21 .064     .000
      [CN= 52.0: N= 3.00: Tp= 1.35]
      [IaREC= 6.00: SMIN= 95.25: SMAX=635.00: SK= .030]
      [InterEventTime=  12.00]
#*******************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITHOUT INFILTRATION) - PRE DEVELOPMENT CONDITIONS
#*******************************************************************************************************
#                  Set infiltration to 0 (CN = 99.99) for water balance analysis
#*******************************************************************************************************
R0068:C00005------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     5.0 01:INF-EX        35.64    1.037 1968.0817_ 6:00  257.40 .434     .000
      [CN=100.0: N= 3.00: Tp= 1.35]
      [IaREC= 6.00: SMIN=  1.39: SMAX=  9.24: SK= .030]
      [InterEventTime=  12.00]
################################################################################
# CONTINUOUS RAINFALL DATA
################################################################################
  ** END OF RUN :   68

*****************************************************************************************





 RUN#:COMMAND#
R0069:C00001------------------------------------------------------------------------------------
     START
      [TZERO =    .00 hrs on 19690101]
      [METOUT=   2    (1=imperial, 2=metric output)]
      [NSTORM=   0 ]
      [NRUN  = 0069 ]
#*******************************************************************************************************
#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
#*******************************************************************************************************
#  Project Name: Barrhaven Conservancy Development
#  Project Number: 1474
#  Date         : 2021/Oct/18
#  Modeller     : J.Burnett, P.Eng.
#  Company      : J.F. Sabourin and Associates
#  License #    : 2582634
#*******************************************************************************************************
# Ottawa International Airport (1967 - 2003)
R0069:C00002------------------------------------------------------------------------------------
  *  READ AES DATA
      [Filename  = YOW_1967_2007.123                                                ]
      [Start_date= 1969.0101: End_date= 1969.1231]
      {DT= 60.min: Length= 8760.hrs: WetHrs=  470: DryHrs= 8290: PTOT= 570.30}
      Maximum average rainfall intensities over
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
       21.10    16.25    10.83     7.78     3.93     2.10     1.40     1.09      .75    mm/hr
       21.10    32.50    32.50    46.70    47.20    50.30    50.30    52.10    54.00    mm
      19690818 19690818 19690818 19690819 19690819 19690819 19690819 19690819 19690819  date
      Number of rainfall events per following interevent time
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         157      119      107       92       72       58       49       43       32
      Number of events with at least the following durations
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         156       84       58       21        5        0        0        0        0
R0069:C00003------------------------------------------------------------------------------------
     COMPUTE API
      [APIini= 50.00: APIkdy= .9000: APIkdt= .9956]
      {APImax= 56.77: APIavg= 16.06: APImin=   .06}
#*******************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITH INFILTRATION) - PRE DEVELOPMENT CONDITIONS
#*******************************************************************************************************
R0069:C00004------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     5.0 01:EX            35.64     .169 1969.0819_ 3:05   30.50 .053     .000
      [CN= 52.0: N= 3.00: Tp= 1.35]
      [IaREC= 6.00: SMIN= 95.25: SMAX=635.00: SK= .030]
      [InterEventTime=  12.00]
#*******************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITHOUT INFILTRATION) - PRE DEVELOPMENT CONDITIONS
#*******************************************************************************************************
#                  Set infiltration to 0 (CN = 99.99) for water balance analysis
#*******************************************************************************************************
R0069:C00005------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     5.0 01:INF-EX        35.64     .911 1969.0818_22:50  233.70 .410     .000
      [CN=100.0: N= 3.00: Tp= 1.35]
      [IaREC= 6.00: SMIN=  1.39: SMAX=  9.24: SK= .030]
      [InterEventTime=  12.00]
################################################################################
# CONTINUOUS RAINFALL DATA
################################################################################
  ** END OF RUN :   69

*****************************************************************************************





 RUN#:COMMAND#
R0070:C00001------------------------------------------------------------------------------------
     START
      [TZERO =    .00 hrs on 19700101]
      [METOUT=   2    (1=imperial, 2=metric output)]
      [NSTORM=   0 ]
      [NRUN  = 0070 ]
#*******************************************************************************************************
#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
#*******************************************************************************************************
#  Project Name: Barrhaven Conservancy Development
#  Project Number: 1474
#  Date         : 2021/Oct/18
#  Modeller     : J.Burnett, P.Eng.
#  Company      : J.F. Sabourin and Associates
#  License #    : 2582634
#*******************************************************************************************************
# Ottawa International Airport (1967 - 2003)
R0070:C00002------------------------------------------------------------------------------------
  *  READ AES DATA
      [Filename  = YOW_1967_2007.123                                                ]
      [Start_date= 1970.0101: End_date= 1970.1231]
      {DT= 60.min: Length= 8760.hrs: WetHrs=  373: DryHrs= 8387: PTOT= 558.90}
      Maximum average rainfall intensities over
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
       35.30    18.30    12.20     6.10     3.63     1.81     1.21     1.46      .99    mm/hr
       35.30    36.60    36.60    36.60    43.50    43.50    43.50    69.90    71.20    mm
      19700926 19700926 19700926 19700927 19700817 19700817 19700818 19700926 19700927  date
      Number of rainfall events per following interevent time
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         148      127      109       84       72       60       54       41       30
      Number of events with at least the following durations
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         147       79       40       15        3        0        0        0        0
R0070:C00003------------------------------------------------------------------------------------
     COMPUTE API
      [APIini= 50.00: APIkdy= .9000: APIkdt= .9956]
      {APImax= 76.00: APIavg= 15.84: APImin=   .07}
#*******************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITH INFILTRATION) - PRE DEVELOPMENT CONDITIONS
#*******************************************************************************************************
R0070:C00004------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     5.0 01:EX            35.64     .221 1970.0926_22:15   29.88 .053     .000
      [CN= 52.0: N= 3.00: Tp= 1.35]
      [IaREC= 6.00: SMIN= 95.25: SMAX=635.00: SK= .030]
      [InterEventTime=  12.00]
#*******************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITHOUT INFILTRATION) - PRE DEVELOPMENT CONDITIONS
#*******************************************************************************************************
#                  Set infiltration to 0 (CN = 99.99) for water balance analysis
#*******************************************************************************************************
R0070:C00005------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     5.0 01:INF-EX        35.64    1.126 1970.0926_22:00  222.47 .398     .000
      [CN=100.0: N= 3.00: Tp= 1.35]
      [IaREC= 6.00: SMIN=  1.39: SMAX=  9.24: SK= .030]
      [InterEventTime=  12.00]
################################################################################
# CONTINUOUS RAINFALL DATA
################################################################################
  ** END OF RUN :   70

*****************************************************************************************





 RUN#:COMMAND#
R0071:C00001------------------------------------------------------------------------------------
     START
      [TZERO =    .00 hrs on 19710101]
      [METOUT=   2    (1=imperial, 2=metric output)]
      [NSTORM=   0 ]
      [NRUN  = 0071 ]
#*******************************************************************************************************
#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
#*******************************************************************************************************
#  Project Name: Barrhaven Conservancy Development
#  Project Number: 1474
#  Date         : 2021/Oct/18
#  Modeller     : J.Burnett, P.Eng.
#  Company      : J.F. Sabourin and Associates
#  License #    : 2582634
#*******************************************************************************************************
# Ottawa International Airport (1967 - 2003)
R0071:C00002------------------------------------------------------------------------------------
  *  READ AES DATA
      [Filename  = YOW_1967_2007.123                                                ]
      [Start_date= 1971.0101: End_date= 1971.1231]
      {DT= 60.min: Length= 8760.hrs: WetHrs=  412: DryHrs= 8348: PTOT= 522.10}
      Maximum average rainfall intensities over
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
```

```
       24.60    16.60    11.67     6.13     3.09     1.56     1.06      .79      .54    mm/hr
       24.60    33.20    35.00    36.80    37.10    37.40    38.00    38.00    38.90    mm
      19710810 19710810 19710810 19710810 19710810 19710810 19710811 19710812 19710830  date
      Number of rainfall events per following interevent time
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         156      123      113       93       72       61       52       42       33
      Number of events with at least the following durations
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         155       81       59       21        2        0        0        0        0
R0071:C00003----------------------------------------------------------------------------------------
     COMPUTE API
      [APIini= 50.00: APIkdy= .9000: APIkdt= .9956]
      {APImax= 62.22: APIavg= 14.84: APImin=   .36}
#***********************************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITH INFILTRATION) - PRE DEVELOPMENT CONDITIONS
#***********************************************************************************************************************
R0071:C00004------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     5.0 01:EX            35.64     .161 1971.0810_16:40   22.27 .043     .000
      [CN= 52.0: N= 3.00: Tp= 1.35]
      [IaREC= 6.00: SMIN= 95.25: SMAX=635.00: SK= .030]
      [InterEventTime=  12.00]
#***********************************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITHOUT INFILTRATION) - PRE DEVELOPMENT CONDITIONS
#***********************************************************************************************************************
#                  Set infiltration to 0 (CN = 99.99) for water balance analysis
#***********************************************************************************************************************
R0071:C00005------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     5.0 01:INF-EX        35.64    1.010 1971.0810_16:20  181.82 .348     .000
      [CN=100.0: N= 3.00: Tp= 1.35]
      [IaREC= 6.00: SMIN=  1.39: SMAX=  9.24: SK= .030]
      [InterEventTime=  12.00]
###############################################################################
# CONTINUOUS RAINFALL DATA
###############################################################################
  ** END OF RUN :   71

****************************************************************************************************

 RUN#:COMMAND#
R0072:C00001----------------------------------------------------------------------------------------
     START
      [TZERO =    .00 hrs on 19720101]
      [METOUT=   2    (1=imperial, 2=metric output)]
      [NSTORM=   0 ]
      [NRUN  = 0072 ]
#***********************************************************************************************************************
#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
#***********************************************************************************************************************
#  Project Name: Barrhaven Conservancy Development
#  Project Number: 1474
#  Date         : 2021/Oct/18
#  Modeller     : J.Burnett, P.Eng.
#  Company      : J.F. Sabourin and Associates
#  License #    : 2582634
#***********************************************************************************************************************
# Ottawa International Airport (1967 - 2003)
R0072:C00002----------------------------------------------------------------------------------------
  *  READ AES DATA
      [Filename  = YOW_1967_2007.123                                           ]
      [Start_date= 1972.0101: End_date= 1972.1230]
      {DT= 60.min: Length= 8760.hrs: WetHrs=  489: DryHrs= 8271: PTOT= 784.30}
      Maximum average rainfall intensities over
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
       37.30    19.15    12.97     8.15     4.50     2.53     2.00     1.71     1.17    mm/hr
       37.30    38.30    38.90    48.90    54.00    60.70    72.10    82.20    84.20    mm
      19720712 19720712 19720807 19720808 19720808 19720808 19720713 19720714 19720715  date
      Number of rainfall events per following interevent time
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         170      133      122       86       76       60       45       41       31
      Number of events with at least the following durations
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         169       96       58       21        5        0        0        0        0
R0072:C00003----------------------------------------------------------------------------------------
     COMPUTE API
      [APIini= 50.00: APIkdy= .9000: APIkdt= .9956]
      {APImax=108.88: APIavg= 21.70: APImin=   .00}
#***********************************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITH INFILTRATION) - PRE DEVELOPMENT CONDITIONS
#***********************************************************************************************************************
R0072:C00004------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     5.0 01:EX            35.64     .343 1972.0808_ 0:00   71.40 .091     .000
      [CN= 52.0: N= 3.00: Tp= 1.35]
      [IaREC= 6.00: SMIN= 95.25: SMAX=635.00: SK= .030]
      [InterEventTime=  12.00]
#***********************************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITHOUT INFILTRATION) - PRE DEVELOPMENT CONDITIONS
#***********************************************************************************************************************
#                  Set infiltration to 0 (CN = 99.99) for water balance analysis
#***********************************************************************************************************************
R0072:C00005------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     5.0 01:INF-EX        35.64    1.277 1972.0807_23:45  375.41 .479     .000
      [CN=100.0: N= 3.00: Tp= 1.35]
      [IaREC= 6.00: SMIN=  1.39: SMAX=  9.24: SK= .030]
      [InterEventTime=  12.00]
###############################################################################
# CONTINUOUS RAINFALL DATA
###############################################################################
  ** END OF RUN :   72

****************************************************************************************************

 RUN#:COMMAND#
R0073:C00001----------------------------------------------------------------------------------------
     START
      [TZERO =    .00 hrs on 19730101]
      [METOUT=   2    (1=imperial, 2=metric output)]
      [NSTORM=   0 ]
      [NRUN  = 0073 ]
#***********************************************************************************************************************
#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
#***********************************************************************************************************************
#  Project Name: Barrhaven Conservancy Development
#  Project Number: 1474
#  Date         : 2021/Oct/18
#  Modeller     : J.Burnett, P.Eng.
#  Company      : J.F. Sabourin and Associates
#  License #    : 2582634
#***********************************************************************************************************************
# Ottawa International Airport (1967 - 2003)
R0073:C00002----------------------------------------------------------------------------------------
  *  READ AES DATA
      [Filename  = YOW_1967_2007.123                                           ]
      [Start_date= 1973.0101: End_date= 1973.1231]
      {DT= 60.min: Length= 8760.hrs: WetHrs=  549: DryHrs= 8211: PTOT= 744.90}
      Maximum average rainfall intensities over
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
       30.00    17.25    12.33     7.10     3.63     1.89     1.28      .96      .96    mm/hr
       30.00    34.50    37.00    42.60    43.60    45.40    46.00    46.00    69.20    mm
      19730611 19730808 19730808 19730808 19730808 19730616 19730616 19730616 19731005  date
      Number of rainfall events per following interevent time
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         200      164      143      108       79       61       54       43       37
      Number of events with at least the following durations
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         200      102       66       20        4        0        0        0        0
R0073:C00003----------------------------------------------------------------------------------------
     COMPUTE API
      [APIini= 50.00: APIkdy= .9000: APIkdt= .9956]
      {APImax= 78.26: APIavg= 20.56: APImin=   .06}
#***********************************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITH INFILTRATION) - PRE DEVELOPMENT CONDITIONS
#***********************************************************************************************************************
R0073:C00004------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     5.0 01:EX            35.64     .268 1973.0808_21:05   51.01 .068     .000
      [CN= 52.0: N= 3.00: Tp= 1.35]
      [IaREC= 6.00: SMIN= 95.25: SMAX=635.00: SK= .030]
      [InterEventTime=  12.00]
#***********************************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITHOUT INFILTRATION) - PRE DEVELOPMENT CONDITIONS
#***********************************************************************************************************************
#                  Set infiltration to 0 (CN = 99.99) for water balance analysis
#***********************************************************************************************************************
R0073:C00005------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     5.0 01:INF-EX        35.64    1.245 1973.0808_20:50  337.66 .453     .000
      [CN=100.0: N= 3.00: Tp= 1.35]
      [IaREC= 6.00: SMIN=  1.39: SMAX=  9.24: SK= .030]
      [InterEventTime=  12.00]
###############################################################################
# CONTINUOUS RAINFALL DATA
###############################################################################
  ** END OF RUN :   73

****************************************************************************************************

 RUN#:COMMAND#
R0074:C00001----------------------------------------------------------------------------------------
     START
      [TZERO =    .00 hrs on 19740101]
      [METOUT=   2    (1=imperial, 2=metric output)]
      [NSTORM=   0 ]
      [NRUN  = 0074 ]
#***********************************************************************************************************************
#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
#***********************************************************************************************************************
#  Project Name: Barrhaven Conservancy Development
#  Project Number: 1474
#  Date         : 2021/Oct/18
#  Modeller     : J.Burnett, P.Eng.
#  Company      : J.F. Sabourin and Associates
#  License #    : 2582634
#***********************************************************************************************************************
# Ottawa International Airport (1967 - 2003)
R0074:C00002----------------------------------------------------------------------------------------
  *  READ AES DATA
      [Filename  = YOW_1967_2007.123                                           ]
      [Start_date= 1974.0101: End_date= 1974.1231]
      {DT= 60.min: Length= 8760.hrs: WetHrs=  320: DryHrs= 8440: PTOT= 386.20}
      Maximum average rainfall intensities over
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
       20.60    15.40    10.37     5.18     2.98     1.63     1.08      .81      .54    mm/hr
       20.60    30.80    31.10    31.10    35.70    39.00    39.00    39.00    39.00    mm
      19740718 19740719 19740719 19740719 19740305 19740305 19740306 19740306 19740307  date
      Number of rainfall events per following interevent time
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         129      105       93       77       63       50       38       33       23
      Number of events with at least the following durations
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         128       66       32       10        3        0        0        0        0
R0074:C00003----------------------------------------------------------------------------------------
     COMPUTE API
      [APIini= 50.00: APIkdy= .9000: APIkdt= .9956]
      {APImax= 52.93: APIavg= 11.36: APImin=   .00}
#***********************************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITH INFILTRATION) - PRE DEVELOPMENT CONDITIONS
#***********************************************************************************************************************
R0074:C00004------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     5.0 01:EX            35.64     .093 1974.0719_ 1:50   13.35 .035     .000
      [CN= 52.0: N= 3.00: Tp= 1.35]
      [IaREC= 6.00: SMIN= 95.25: SMAX=635.00: SK= .030]
      [InterEventTime=  12.00]
#***********************************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITHOUT INFILTRATION) - PRE DEVELOPMENT CONDITIONS
#***********************************************************************************************************************
#                  Set infiltration to 0 (CN = 99.99) for water balance analysis
#***********************************************************************************************************************
R0074:C00005------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     5.0 01:INF-EX        35.64     .804 1974.0719_ 1:35  119.81 .310     .000
      [CN=100.0: N= 3.00: Tp= 1.35]
      [IaREC= 6.00: SMIN=  1.39: SMAX=  9.24: SK= .030]
      [InterEventTime=  12.00]
###############################################################################
# CONTINUOUS RAINFALL DATA
###############################################################################
  ** END OF RUN :   74

****************************************************************************************************

 RUN#:COMMAND#
R0075:C00001----------------------------------------------------------------------------------------
     START
      [TZERO =    .00 hrs on 19750101]
      [METOUT=   2    (1=imperial, 2=metric output)]
      [NSTORM=   0 ]
      [NRUN  = 0075 ]
#***********************************************************************************************************************
#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
#***********************************************************************************************************************
#  Project Name: Barrhaven Conservancy Development
#  Project Number: 1474
#  Date         : 2021/Oct/18
#  Modeller     : J.Burnett, P.Eng.
#  Company      : J.F. Sabourin and Associates
#  License #    : 2582634
#***********************************************************************************************************************
# Ottawa International Airport (1967 - 2003)
R0075:C00002----------------------------------------------------------------------------------------
  *  READ AES DATA
      [Filename  = YOW_1967_2007.123                                           ]
      [Start_date= 1975.0101: End_date= 1975.1231]
      {DT= 60.min: Length= 8760.hrs: WetHrs=  344: DryHrs= 8416: PTOT= 535.50}
      Maximum average rainfall intensities over
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
       34.80    18.40    12.53     6.32     3.33     1.73     1.15      .87      .62    mm/hr
       34.80    36.80    37.60    37.90    40.00    41.50    41.50    41.80    44.40    mm
      19750708 19750720 19750720 19750720 19750721 19750721 19750721 19750721 19750928  date
      Number of rainfall events per following interevent time
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         136      118       99       78       61       49       40       33       25
      Number of events with at least the following durations
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         135       70       40       17        1        0        0        0        0
R0075:C00003----------------------------------------------------------------------------------------
     COMPUTE API
      [APIini= 50.00: APIkdy= .9000: APIkdt= .9956]
      {APImax= 73.23: APIavg= 15.16: APImin=   .00}
#***********************************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITH INFILTRATION) - PRE DEVELOPMENT CONDITIONS
#***********************************************************************************************************************
R0075:C00004------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     5.0 01:EX            35.64     .169 1975.0720_17:55   30.69 .057     .000
      [CN= 52.0: N= 3.00: Tp= 1.35]
      [IaREC= 6.00: SMIN= 95.25: SMAX=635.00: SK= .030]
      [InterEventTime=  12.00]
#***********************************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITHOUT INFILTRATION) - PRE DEVELOPMENT CONDITIONS
#***********************************************************************************************************************
#                  Set infiltration to 0 (CN = 99.99) for water balance analysis
#***********************************************************************************************************************
R0075:C00005------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     5.0 01:INF-EX        35.64    1.042 1975.0708_18:00  219.51 .410     .000
      [CN=100.0: N= 3.00: Tp= 1.35]
      [IaREC= 6.00: SMIN=  1.39: SMAX=  9.24: SK= .030]
      [InterEventTime=  12.00]
###############################################################################
# CONTINUOUS RAINFALL DATA
###############################################################################
  ** END OF RUN :   75

****************************************************************************************************

 RUN#:COMMAND#
R0076:C00001----------------------------------------------------------------------------------------
     START
      [TZERO =    .00 hrs on 19760101]
      [METOUT=   2    (1=imperial, 2=metric output)]
      [NSTORM=   0 ]
      [NRUN  = 0076 ]
#***********************************************************************************************************************
#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
#***********************************************************************************************************************
#  Project Name: Barrhaven Conservancy Development
#  Project Number: 1474
#  Date         : 2021/Oct/18
#  Modeller     : J.Burnett, P.Eng.
#  Company      : J.F. Sabourin and Associates
#  License #    : 2582634
#***********************************************************************************************************************
# Ottawa International Airport (1967 - 2003)
R0076:C00002----------------------------------------------------------------------------------------
  *  READ AES DATA
      [Filename  = YOW_1967_2007.123                                           ]
      [Start_date= 1976.0101: End_date= 1976.1230]
      {DT= 60.min: Length= 8064.hrs: WetHrs=  390: DryHrs= 7674: PTOT= 493.20}
      Maximum average rainfall intensities over
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
       14.00     8.90     6.43     4.65     2.35     1.39      .97      .99      .80    mm/hr
       14.00    17.80    19.30    27.90    28.20    33.30    35.10    47.60    57.50    mm
      19760828 19760828 19760828 19760828 19760828 19760920 19760520 19760520 19760921  date
      Number of rainfall events per following interevent time
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         164      133      117       89       72       62       46       40       28
      Number of events with at least the following durations
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         163       80       47       15        2        0        0        0        0
R0076:C00003----------------------------------------------------------------------------------------
     COMPUTE API
      [APIini= 50.00: APIkdy= .9000: APIkdt= .9956]
      {APImax= 59.66: APIavg= 15.35: APImin=   .02}
#***********************************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITH INFILTRATION) - PRE DEVELOPMENT CONDITIONS
#***********************************************************************************************************************
R0076:C00004------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     5.0 01:EX            35.64     .085 1976.0519_23:30   19.66 .040     .000
      [CN= 52.0: N= 3.00: Tp= 1.35]
      [IaREC= 6.00: SMIN= 95.25: SMAX=635.00: SK= .030]
      [InterEventTime=  12.00]
#***********************************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITHOUT INFILTRATION) - PRE DEVELOPMENT CONDITIONS
#***********************************************************************************************************************
#                  Set infiltration to 0 (CN = 99.99) for water balance analysis
```

```
#****************************************************************************************************
R0076:C00005------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     5.0 01:INF-EX        35.64     .369 1976.0828_22:50  170.05 .345     .000
      [CN=100.0: N= 3.00: Tp= 1.35]
      [IaREC= 6.00: SMIN=  1.39: SMAX=  9.24: SK= .030]
      [InterEventTime=  12.00]
################################################################################
# CONTINUOUS RAINFALL DATA
################################################################################
  ** END OF RUN :   76
 ****************************************************************************************************
 RUN#:COMMAND#
R0077:C00001----------------------------------------------------------------------------------------
     START
      [TZERO =    .00 hrs on 19770101]
      [METOUT=   2    (1=imperial, 2=metric output)]
      [NSTORM=   0 ]
      [NRUN  = 0077 ]
#****************************************************************************************************
#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
#****************************************************************************************************
#  Project Name: Barrhaven Conservancy Development
#  Project Number: 1474
#  Date         : 2021/Oct/18
#  Modeller     : J.Burnett, P.Eng.
#  Company      : J.F. Sabourin and Associates
#  License #    : 2582634
#****************************************************************************************************
# Ottawa International Airport (1967 - 2003)
R0077:C00002----------------------------------------------------------------------------------------
  *  READ AES DATA
      [Filename  = YOW_1967_2007.123                                        ]
      [Start_date= 1977.0101: End_date= 1977.1231]
      {DT= 60.min: Length= 8016.hrs: WetHrs=  512: DryHrs= 7504: PTOT= 677.80}
      Maximum average rainfall intensities over
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
       21.30    15.20    10.40     6.53     3.30     1.66     1.40     1.06      .73    mm/hr
       21.30    30.40    31.20    39.20    39.60    39.80    50.40    51.00    52.40    mm
      19770717 19770717 19770717 19770901 19770902 19770314 19770314 19770314 19770718  date
      Number of rainfall events per following interevent time
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         172      142      126       99       78       63       53       42       30
      Number of events with at least the following durations
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         171       88       60       22        5        1        0        0        0
R0077:C00003----------------------------------------------------------------------------------------
     COMPUTE API
      [APIini= 50.00: APIkdy= .9000: APIkdt= .9956]
      {APImax= 74.80: APIavg= 20.62: APImin=  1.63}
#****************************************************************************************************
#                   Barrhaven Conservancy Development Phase 3 (WITH INFILTRATION) - PRE DEVELOPMENT CONDITIONS
#****************************************************************************************************
R0077:C00004------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     5.0 01:EX            35.64     .165 1977.0902_ 0:00   39.51 .058     .000
      [CN= 52.0: N= 3.00: Tp= 1.35]
      [IaREC= 6.00: SMIN= 95.25: SMAX=635.00: SK= .030]
      [InterEventTime=  12.00]
#****************************************************************************************************
#                   Barrhaven Conservancy Development Phase 3 (WITHOUT INFILTRATION) - PRE DEVELOPMENT CONDITIONS
#****************************************************************************************************
#                   Set infiltration to 0 (CN = 99.99) for water balance analysis
#****************************************************************************************************
R0077:C00005------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     5.0 01:INF-EX        35.64     .918 1977.0901_23:45  283.86 .419     .000
      [CN=100.0: N= 3.00: Tp= 1.35]
      [IaREC= 6.00: SMIN=  1.39: SMAX=  9.24: SK= .030]
      [InterEventTime=  12.00]
################################################################################
# CONTINUOUS RAINFALL DATA
################################################################################
  ** END OF RUN :   77
 ****************************************************************************************************
 RUN#:COMMAND#
R0078:C00001----------------------------------------------------------------------------------------
     START
      [TZERO =    .00 hrs on 19780101]
      [METOUT=   2    (1=imperial, 2=metric output)]
      [NSTORM=   0 ]
      [NRUN  = 0078 ]
#****************************************************************************************************
#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
#****************************************************************************************************
#  Project Name: Barrhaven Conservancy Development
#  Project Number: 1474
#  Date         : 2021/Oct/18
#  Modeller     : J.Burnett, P.Eng.
#  Company      : J.F. Sabourin and Associates
#  License #    : 2582634
#****************************************************************************************************
# Ottawa International Airport (1967 - 2003)
R0078:C00002----------------------------------------------------------------------------------------
  *  READ AES DATA
      [Filename  = YOW_1967_2007.123                                        ]
      [Start_date= 1978.0101: End_date= 1978.1231]
      {DT= 60.min: Length= 8040.hrs: WetHrs=  409: DryHrs= 7631: PTOT= 641.40}
      Maximum average rainfall intensities over
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
       36.00    18.15    12.10     6.05     3.04     1.64     1.13      .87      .58    mm/hr
       36.00    36.30    36.30    36.30    36.50    39.40    40.60    41.60    41.60    mm
      19780618 19780618 19780618 19780618 19780619 19780411 19780412 19780620 19780621  date
      Number of rainfall events per following interevent time
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         154      128      118       97       71       58       51       46       33
      Number of events with at least the following durations
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         154       75       44       18        5        0        0        0        0
R0078:C00003----------------------------------------------------------------------------------------
     COMPUTE API
      [APIini= 50.00: APIkdy= .9000: APIkdt= .9956]
      {APImax= 65.36: APIavg= 19.25: APImin=   .25}
#****************************************************************************************************
#                   Barrhaven Conservancy Development Phase 3 (WITH INFILTRATION) - PRE DEVELOPMENT CONDITIONS
#****************************************************************************************************
R0078:C00004------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     5.0 01:EX            35.64     .202 1978.0618_18:10   29.63 .046     .000
      [CN= 52.0: N= 3.00: Tp= 1.35]
      [IaREC= 6.00: SMIN= 95.25: SMAX=635.00: SK= .030]
      [InterEventTime=  12.00]
#****************************************************************************************************
#                   Barrhaven Conservancy Development Phase 3 (WITHOUT INFILTRATION) - PRE DEVELOPMENT CONDITIONS
#****************************************************************************************************
#                   Set infiltration to 0 (CN = 99.99) for water balance analysis
#****************************************************************************************************
R0078:C00005------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     5.0 01:INF-EX        35.64    1.123 1978.0618_18:00  269.84 .421     .000
      [CN=100.0: N= 3.00: Tp= 1.35]
      [IaREC= 6.00: SMIN=  1.39: SMAX=  9.24: SK= .030]
      [InterEventTime=  12.00]
################################################################################
# CONTINUOUS RAINFALL DATA
################################################################################
  ** END OF RUN :   78
 ****************************************************************************************************
 RUN#:COMMAND#
R0079:C00001----------------------------------------------------------------------------------------
     START
      [TZERO =    .00 hrs on 19790101]
      [METOUT=   2    (1=imperial, 2=metric output)]
      [NSTORM=   0 ]
      [NRUN  = 0079 ]
#****************************************************************************************************
#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
#****************************************************************************************************
#  Project Name: Barrhaven Conservancy Development
#  Project Number: 1474
#  Date         : 2021/Oct/18
#  Modeller     : J.Burnett, P.Eng.
#  Company      : J.F. Sabourin and Associates
#  License #    : 2582634
#****************************************************************************************************
# Ottawa International Airport (1967 - 2003)
R0079:C00002----------------------------------------------------------------------------------------
  *  READ AES DATA
      [Filename  = YOW_1967_2007.123                                        ]
      [Start_date= 1979.0101: End_date= 1979.1231]
      {DT= 60.min: Length= 8760.hrs: WetHrs=  546: DryHrs= 8214: PTOT= 866.50}
      Maximum average rainfall intensities over
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
       34.90    22.00    14.67     7.33     5.14     2.63     1.75     1.31      .88    mm/hr
       34.90    44.00    44.00    44.00    61.70    63.00    63.00    63.00    63.00    mm
      19790616 19790616 19790616 19790616 19790914 19790915 19790915 19790915 19790917  date
      Number of rainfall events per following interevent time
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         188      147      129      103       86       60       53       43       36
      Number of events with at least the following durations
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         187       97       65       25        6        1        0        0        0
R0079:C00003----------------------------------------------------------------------------------------
     COMPUTE API
      [APIini= 50.00: APIkdy= .9000: APIkdt= .9956]
      {APImax= 78.42: APIavg= 23.13: APImin=   .13}
#****************************************************************************************************
#                   Barrhaven Conservancy Development Phase 3 (WITH INFILTRATION) - PRE DEVELOPMENT CONDITIONS
#****************************************************************************************************
R0079:C00004------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     5.0 01:EX            35.64     .291 1979.0616_15:05   82.76 .096     .000
      [CN= 52.0: N= 3.00: Tp= 1.35]
      [IaREC= 6.00: SMIN= 95.25: SMAX=635.00: SK= .030]
      [InterEventTime=  12.00]
#****************************************************************************************************
#                   Barrhaven Conservancy Development Phase 3 (WITHOUT INFILTRATION) - PRE DEVELOPMENT CONDITIONS
#****************************************************************************************************
#                   Set infiltration to 0 (CN = 99.99) for water balance analysis
#****************************************************************************************************
R0079:C00005------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     5.0 01:INF-EX        35.64    1.388 1979.0616_14:55  449.28 .519     .000
      [CN=100.0: N= 3.00: Tp= 1.35]
      [IaREC= 6.00: SMIN=  1.39: SMAX=  9.24: SK= .030]
      [InterEventTime=  12.00]
################################################################################
# CONTINUOUS RAINFALL DATA
################################################################################
  ** END OF RUN :   79
 ****************************************************************************************************
 RUN#:COMMAND#
R0080:C00001----------------------------------------------------------------------------------------
     START
      [TZERO =    .00 hrs on 19800101]
      [METOUT=   2    (1=imperial, 2=metric output)]
      [NSTORM=   0 ]
      [NRUN  = 0080 ]
#****************************************************************************************************
#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
#****************************************************************************************************
#  Project Name: Barrhaven Conservancy Development
#  Project Number: 1474
#  Date         : 2021/Oct/18
#  Modeller     : J.Burnett, P.Eng.
#  Company      : J.F. Sabourin and Associates
#  License #    : 2582634
#****************************************************************************************************
# Ottawa International Airport (1967 - 2003)
R0080:C00002----------------------------------------------------------------------------------------
  *  READ AES DATA
      [Filename  = YOW_1967_2007.123                                        ]
      [Start_date= 1980.0101: End_date= 1980.1230]
      {DT= 60.min: Length= 8760.hrs: WetHrs=  427: DryHrs= 8333: PTOT= 622.00}
      Maximum average rainfall intensities over
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
       15.00     9.20     6.50     4.72     3.57     1.97     1.35     1.01      .86    mm/hr
       15.00    18.40    19.50    28.30    42.80    47.20    48.60    48.60    62.00    mm
      19800830 19800830 19801025 19801025 19801026 19801026 19801026 19801027 19800902  date
      Number of rainfall events per following interevent time
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         151      125      112       93       79       62       49       44       28
      Number of events with at least the following durations
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         150       85       54       16        4        0        0        0        0
R0080:C00003----------------------------------------------------------------------------------------
     COMPUTE API
      [APIini= 50.00: APIkdy= .9000: APIkdt= .9956]
      {APImax= 68.72: APIavg= 17.50: APImin=   .06}
#****************************************************************************************************
#                   Barrhaven Conservancy Development Phase 3 (WITH INFILTRATION) - PRE DEVELOPMENT CONDITIONS
#****************************************************************************************************
R0080:C00004------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     5.0 01:EX            35.64     .106 1980.1026_ 0:40   32.79 .053     .000
      [CN= 52.0: N= 3.00: Tp= 1.35]
      [IaREC= 6.00: SMIN= 95.25: SMAX=635.00: SK= .030]
      [InterEventTime=  12.00]
#****************************************************************************************************
#                   Barrhaven Conservancy Development Phase 3 (WITHOUT INFILTRATION) - PRE DEVELOPMENT CONDITIONS
#****************************************************************************************************
#                   Set infiltration to 0 (CN = 99.99) for water balance analysis
#****************************************************************************************************
R0080:C00005------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     5.0 01:INF-EX        35.64     .449 1980.1025_17:50  254.15 .409     .000
      [CN=100.0: N= 3.00: Tp= 1.35]
      [IaREC= 6.00: SMIN=  1.39: SMAX=  9.24: SK= .030]
      [InterEventTime=  12.00]
################################################################################
# CONTINUOUS RAINFALL DATA
################################################################################
  ** END OF RUN :   80
 ****************************************************************************************************
 RUN#:COMMAND#
R0081:C00001----------------------------------------------------------------------------------------
     START
      [TZERO =    .00 hrs on 19810101]
      [METOUT=   2    (1=imperial, 2=metric output)]
      [NSTORM=   0 ]
      [NRUN  = 0081 ]
#****************************************************************************************************
#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
#****************************************************************************************************
#  Project Name: Barrhaven Conservancy Development
#  Project Number: 1474
#  Date         : 2021/Oct/18
#  Modeller     : J.Burnett, P.Eng.
#  Company      : J.F. Sabourin and Associates
#  License #    : 2582634
#****************************************************************************************************
# Ottawa International Airport (1967 - 2003)
R0081:C00002----------------------------------------------------------------------------------------
  *  READ AES DATA
      [Filename  = YOW_1967_2007.123                                        ]
      [Start_date= 1981.0101: End_date= 1981.1231]
      {DT= 60.min: Length= 8760.hrs: WetHrs=  641: DryHrs= 8119: PTOT= 936.40}
      Maximum average rainfall intensities over
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
       35.30    31.85    26.20    18.15     9.27     4.83     3.22     2.41     1.62    mm/hr
       35.30    63.70    78.60   108.90   111.30   115.90   115.90   115.90   116.70    mm
      19810805 19810805 19810805 19810805 19810805 19810805 19810806 19810806 19810805  date
      Number of rainfall events per following interevent time
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         226      171      136      109       83       68       59       47       30
      Number of events with at least the following durations
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         225      128       79       28        7        0        0        0        0
R0081:C00003----------------------------------------------------------------------------------------
     COMPUTE API
      [APIini= 50.00: APIkdy= .9000: APIkdt= .9956]
      {APImax=123.49: APIavg= 25.69: APImin=   .26}
#****************************************************************************************************
#                   Barrhaven Conservancy Development Phase 3 (WITH INFILTRATION) - PRE DEVELOPMENT CONDITIONS
#****************************************************************************************************
R0081:C00004------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     5.0 01:EX            35.64    1.244 1981.0805_ 3:30  116.72 .125     .000
      [CN= 52.0: N= 3.00: Tp= 1.35]
      [IaREC= 6.00: SMIN= 95.25: SMAX=635.00: SK= .030]
      [InterEventTime=  12.00]
#****************************************************************************************************
#                   Barrhaven Conservancy Development Phase 3 (WITHOUT INFILTRATION) - PRE DEVELOPMENT CONDITIONS
#****************************************************************************************************
#                   Set infiltration to 0 (CN = 99.99) for water balance analysis
#****************************************************************************************************
R0081:C00005------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     5.0 01:INF-EX        35.64    2.481 1981.0805_ 2:45  459.70 .491     .000
      [CN=100.0: N= 3.00: Tp= 1.35]
      [IaREC= 6.00: SMIN=  1.39: SMAX=  9.24: SK= .030]
      [InterEventTime=  12.00]
################################################################################
# CONTINUOUS RAINFALL DATA
################################################################################
  ** END OF RUN :   81
 ****************************************************************************************************
 RUN#:COMMAND#
R0082:C00001----------------------------------------------------------------------------------------
     START
      [TZERO =    .00 hrs on 19820101]
      [METOUT=   2    (1=imperial, 2=metric output)]
      [NSTORM=   0 ]
      [NRUN  = 0082 ]
#****************************************************************************************************
```

```
#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
#*******************************************************************************************************************
#  Project Name: Barrhaven Conservancy Development
#  Project Number: 1474
#  Date        : 2021/Oct/18
#  Modeller    : J.Burnett, P.Eng.
#  Company     : J.F. Sabourin and Associates
#  License #   : 2582634
#*******************************************************************************************************************
# Ottawa International Airport (1967 - 2003)
R0082:C00002-------------------------------------------------------------------------------------
  *  READ AES DATA
      [Filename  = YOW_1967_2007.123                                         ]
      [Start_date= 1982.0101: End_date= 1982.1231]
      {DT= 60.min: Length= 8760.hrs: WetHrs=  436: DryHrs= 8324: PTOT= 596.10}
      Maximum average rainfall intensities over
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
       19.80    10.75     7.60     5.83     3.36     1.68     1.12      .96      .80    mm/hr
       19.80    21.50    22.80    35.00    40.30    40.30    40.30    46.30    57.30    mm
      19820801 19820901 19820825 19820825 19820825 19820826 19820826 19820825 19820825  date
      Number of rainfall events per following interevent time
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         134      110       98       78       66       57       48       41       33
      Number of events with at least the following durations
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         133       81       58       18        4        1        1        0        0
R0082:C00003-------------------------------------------------------------------------------------
     COMPUTE API
      [APIini= 50.00: APIkdy= .9000: APIkdt= .9956]
      {APImax= 56.66: APIavg= 16.78: APImin=   .03}
#*******************************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITH INFILTRATION) - PRE DEVELOPMENT CONDITIONS
#*******************************************************************************************************************
R0082:C00004------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     5.0 01:EX            35.64     .126 1982.0825_12:40   25.99 .044     .000
      [CN= 52.0: N= 3.00: Tp= 1.35]
      [IaREC= 6.00: SMIN= 95.25: SMAX=635.00: SK= .030]
      [InterEventTime=  12.00]
#*******************************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITHOUT INFILTRATION) - PRE DEVELOPMENT CONDITIONS
#*******************************************************************************************************************
#                  Set infiltration to 0 (CN = 99.99) for water balance analysis
#*******************************************************************************************************************
R0082:C00005------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     5.0 01:INF-EX        35.64     .715 1982.0825_11:45  228.69 .384     .000
      [CN=100.0: N= 3.00: Tp= 1.35]
      [IaREC= 6.00: SMIN=  1.39: SMAX=  9.24: SK= .030]
      [InterEventTime=  12.00]
##############################################################################
# CONTINUOUS RAINFALL DATA
##############################################################################
  ** END OF RUN :   82

*************************************************************************************************

 RUN#:COMMAND#
R0083:C00001-------------------------------------------------------------------------------------
     START
      [TZERO =    .00 hrs on 19830101]
      [METOUT=   2    (1=imperial, 2=metric output)]
      [NSTORM=   0 ]
      [NRUN  = 0083 ]
#*******************************************************************************************************************
#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
#*******************************************************************************************************************
#  Project Name: Barrhaven Conservancy Development
#  Project Number: 1474
#  Date        : 2021/Oct/18
#  Modeller    : J.Burnett, P.Eng.
#  Company     : J.F. Sabourin and Associates
#  License #   : 2582634
#*******************************************************************************************************************
# Ottawa International Airport (1967 - 2003)
R0083:C00002-------------------------------------------------------------------------------------
  *  READ AES DATA
      [Filename  = YOW_1967_2007.123                                         ]
      [Start_date= 1983.0101: End_date= 1983.1231]
      {DT= 60.min: Length= 8760.hrs: WetHrs=  462: DryHrs= 8298: PTOT= 587.50}
      Maximum average rainfall intensities over
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
       10.40     9.70     7.53     5.43     3.18     2.36     1.68     1.32      .92    mm/hr
       10.40    19.40    22.60    32.60    38.20    56.70    60.40    63.20    66.00    mm
      19831004 19830921 19830921 19831005 19831005 19831005 19831005 19831006 19831008  date
      Number of rainfall events per following interevent time
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         143      115      103       85       70       55       50       45       35
      Number of events with at least the following durations
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         142       87       56       28        5        0        0        0        0
R0083:C00003-------------------------------------------------------------------------------------
     COMPUTE API
      [APIini= 50.00: APIkdy= .9000: APIkdt= .9956]
      {APImax= 79.86: APIavg= 16.57: APImin=   .05}
#*******************************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITH INFILTRATION) - PRE DEVELOPMENT CONDITIONS
#*******************************************************************************************************************
R0083:C00004------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     5.0 01:EX            35.64     .169 1983.1005_16:50   28.87 .049     .000
      [CN= 52.0: N= 3.00: Tp= 1.35]
      [IaREC= 6.00: SMIN= 95.25: SMAX=635.00: SK= .030]
      [InterEventTime=  12.00]
#*******************************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITHOUT INFILTRATION) - PRE DEVELOPMENT CONDITIONS
#*******************************************************************************************************************
#                  Set infiltration to 0 (CN = 99.99) for water balance analysis
#*******************************************************************************************************************
R0083:C00005------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     5.0 01:INF-EX        35.64     .647 1983.1005_16:15  217.30 .370     .000
      [CN=100.0: N= 3.00: Tp= 1.35]
      [IaREC= 6.00: SMIN=  1.39: SMAX=  9.24: SK= .030]
      [InterEventTime=  12.00]
##############################################################################
# CONTINUOUS RAINFALL DATA
##############################################################################
  ** END OF RUN :   83

*************************************************************************************************

 RUN#:COMMAND#
R0084:C00001-------------------------------------------------------------------------------------
     START
      [TZERO =    .00 hrs on 19840101]
      [METOUT=   2    (1=imperial, 2=metric output)]
      [NSTORM=   0 ]
      [NRUN  = 0084 ]
#*******************************************************************************************************************
#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
#*******************************************************************************************************************
#  Project Name: Barrhaven Conservancy Development
#  Project Number: 1474
#  Date        : 2021/Oct/18
#  Modeller    : J.Burnett, P.Eng.
#  Company     : J.F. Sabourin and Associates
#  License #   : 2582634
#*******************************************************************************************************************
# Ottawa International Airport (1967 - 2003)
R0084:C00002-------------------------------------------------------------------------------------
  *  READ AES DATA
      [Filename  = YOW_1967_2007.123                                         ]
      [Start_date= 1984.0101: End_date= 1984.1230]
      {DT= 60.min: Length= 8760.hrs: WetHrs=  308: DryHrs= 8452: PTOT= 459.40}
      Maximum average rainfall intensities over
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
       17.80     9.70     7.57     4.33     3.01     1.85     1.58     1.19     1.00    mm/hr
       17.80    19.40    22.70    26.00    36.10    44.30    57.00    57.00    72.20    mm
      19840812 19840812 19840812 19840806 19840812 19840813 19840813 19840814 19840813  date
      Number of rainfall events per following interevent time
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
          98       80       75       63       55       48       40       34       26
      Number of events with at least the following durations
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
          97       58       39       11        3        1        0        0        0
R0084:C00003-------------------------------------------------------------------------------------
     COMPUTE API
      [APIini= 50.00: APIkdy= .9000: APIkdt= .9956]
      {APImax= 86.83: APIavg= 13.22: APImin=   .00}
#*******************************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITH INFILTRATION) - PRE DEVELOPMENT CONDITIONS
#*******************************************************************************************************************
R0084:C00004------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     5.0 01:EX            35.64     .149 1984.0813_ 7:30   27.58 .060     .000
      [CN= 52.0: N= 3.00: Tp= 1.35]
      [IaREC= 6.00: SMIN= 95.25: SMAX=635.00: SK= .030]
      [InterEventTime=  12.00]
#*******************************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITHOUT INFILTRATION) - PRE DEVELOPMENT CONDITIONS
#*******************************************************************************************************************
#                  Set infiltration to 0 (CN = 99.99) for water balance analysis
#*******************************************************************************************************************
R0084:C00005------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     5.0 01:INF-EX        35.64     .621 1984.0812_ 7:55  207.21 .451     .000
      [CN=100.0: N= 3.00: Tp= 1.35]
      [IaREC= 6.00: SMIN=  1.39: SMAX=  9.24: SK= .030]
      [InterEventTime=  12.00]
##############################################################################
# CONTINUOUS RAINFALL DATA
##############################################################################
  ** END OF RUN :   84

*************************************************************************************************

 RUN#:COMMAND#
R0085:C00001-------------------------------------------------------------------------------------
     START
      [TZERO =    .00 hrs on 19850101]
      [METOUT=   2    (1=imperial, 2=metric output)]
      [NSTORM=   0 ]
      [NRUN  = 0085 ]
#*******************************************************************************************************************
#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
#*******************************************************************************************************************
#  Project Name: Barrhaven Conservancy Development
#  Project Number: 1474
#  Date        : 2021/Oct/18
#  Modeller    : J.Burnett, P.Eng.
#  Company     : J.F. Sabourin and Associates
#  License #   : 2582634
#*******************************************************************************************************************
# Ottawa International Airport (1967 - 2003)
R0085:C00002-------------------------------------------------------------------------------------
  *  READ AES DATA
      [Filename  = YOW_1967_2007.123                                         ]
      [Start_date= 1985.0101: End_date= 1985.1231]
      {DT= 60.min: Length= 8760.hrs: WetHrs=  354: DryHrs= 8406: PTOT= 559.90}
      Maximum average rainfall intensities over
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
       19.00    13.60    11.73     6.60     3.30     1.65     1.11      .89      .60    mm/hr
       19.00    27.20    35.20    39.60    39.60    39.60    40.10    42.80    43.40    mm
      19850716 19850617 19850617 19850618 19850618 19850618 19850618 19850827 19850827  date
      Number of rainfall events per following interevent time
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         108       88       84       74       69       56       49       43       32
      Number of events with at least the following durations
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         107       70       43       13        4        1        0        0        0
R0085:C00003-------------------------------------------------------------------------------------
     COMPUTE API
      [APIini= 50.00: APIkdy= .9000: APIkdt= .9956]
      {APImax= 57.29: APIavg= 15.86: APImin=   .20}
#*******************************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITH INFILTRATION) - PRE DEVELOPMENT CONDITIONS
#*******************************************************************************************************************
R0085:C00004------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     5.0 01:EX            35.64     .149 1985.0618_ 0:50   29.00 .052     .000
      [CN= 52.0: N= 3.00: Tp= 1.35]
      [IaREC= 6.00: SMIN= 95.25: SMAX=635.00: SK= .030]
      [InterEventTime=  12.00]
#*******************************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITHOUT INFILTRATION) - PRE DEVELOPMENT CONDITIONS
#*******************************************************************************************************************
#                  Set infiltration to 0 (CN = 99.99) for water balance analysis
#*******************************************************************************************************************
R0085:C00005------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     5.0 01:INF-EX        35.64     .882 1985.0618_ 0:20  262.29 .468     .000
      [CN=100.0: N= 3.00: Tp= 1.35]
      [IaREC= 6.00: SMIN=  1.39: SMAX=  9.24: SK= .030]
      [InterEventTime=  12.00]
##############################################################################
# CONTINUOUS RAINFALL DATA
##############################################################################
  ** END OF RUN :   85

*************************************************************************************************

 RUN#:COMMAND#
R0086:C00001-------------------------------------------------------------------------------------
     START
      [TZERO =    .00 hrs on 19860101]
      [METOUT=   2    (1=imperial, 2=metric output)]
      [NSTORM=   0 ]
      [NRUN  = 0086 ]
#*******************************************************************************************************************
#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
#*******************************************************************************************************************
#  Project Name: Barrhaven Conservancy Development
#  Project Number: 1474
#  Date        : 2021/Oct/18
#  Modeller    : J.Burnett, P.Eng.
#  Company     : J.F. Sabourin and Associates
#  License #   : 2582634
#*******************************************************************************************************************
# Ottawa International Airport (1967 - 2003)
R0086:C00002-------------------------------------------------------------------------------------
  *  READ AES DATA
      [Filename  = YOW_1967_2007.123                                         ]
      [Start_date= 1986.0101: End_date= 1986.1231]
      {DT= 60.min: Length= 8040.hrs: WetHrs=  520: DryHrs= 7520: PTOT= 849.40}
      Maximum average rainfall intensities over
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
       18.30    17.80    13.57     7.07     4.84     2.89     2.42     1.85     1.31    mm/hr
       18.30    35.60    40.70    42.40    58.10    69.30    87.00    88.60    94.40    mm
      19860729 19860729 19860729 19860729 19860912 19860912 19860912 19860912 19860913  date
      Number of rainfall events per following interevent time
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         178      144      131      104       80       63       53       48       33
      Number of events with at least the following durations
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         177      104       76       24        2        0        0        0        0
R0086:C00003-------------------------------------------------------------------------------------
     COMPUTE API
      [APIini= 50.00: APIkdy= .9000: APIkdt= .9956]
      {APImax=102.23: APIavg= 25.30: APImin=   .17}
#*******************************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITH INFILTRATION) - PRE DEVELOPMENT CONDITIONS
#*******************************************************************************************************************
R0086:C00004------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     5.0 01:EX            35.64     .382 1986.0911_23:55   88.54 .104     .000
      [CN= 52.0: N= 3.00: Tp= 1.35]
      [IaREC= 6.00: SMIN= 95.25: SMAX=635.00: SK= .030]
      [InterEventTime=  12.00]
#*******************************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITHOUT INFILTRATION) - PRE DEVELOPMENT CONDITIONS
#*******************************************************************************************************************
#                  Set infiltration to 0 (CN = 99.99) for water balance analysis
#*******************************************************************************************************************
R0086:C00005------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     5.0 01:INF-EX        35.64    1.108 1986.0729_15:55  418.06 .492     .000
      [CN=100.0: N= 3.00: Tp= 1.35]
      [IaREC= 6.00: SMIN=  1.39: SMAX=  9.24: SK= .030]
      [InterEventTime=  12.00]
##############################################################################
# CONTINUOUS RAINFALL DATA
##############################################################################
  ** END OF RUN :   86

*************************************************************************************************

 RUN#:COMMAND#
R0087:C00001-------------------------------------------------------------------------------------
     START
      [TZERO =    .00 hrs on 19870101]
      [METOUT=   2    (1=imperial, 2=metric output)]
      [NSTORM=   0 ]
      [NRUN  = 0087 ]
#*******************************************************************************************************************
#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
#*******************************************************************************************************************
#  Project Name: Barrhaven Conservancy Development
#  Project Number: 1474
#  Date        : 2021/Oct/18
#  Modeller    : J.Burnett, P.Eng.
#  Company     : J.F. Sabourin and Associates
#  License #   : 2582634
#*******************************************************************************************************************
# Ottawa International Airport (1967 - 2003)
R0087:C00002-------------------------------------------------------------------------------------
  *  READ AES DATA
      [Filename  = YOW_1967_2007.123                                         ]
      [Start_date= 1987.0101: End_date= 1987.1231]
      {DT= 60.min: Length= 7344.hrs: WetHrs=  492: DryHrs= 6852: PTOT= 640.10}
      Maximum average rainfall intensities over
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
       20.00    13.90    14.03     7.05     4.87     2.46     1.84     1.40      .93    mm/hr
       20.00    27.80    42.10    42.30    58.40    59.00    66.40    67.00    67.00    mm
      19870724 19870724 19870724 19870724 19870724 19870725 19870725 19870726 19870726  date
      Number of rainfall events per following interevent time
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         180      147      128       93       74       55       49       41       28
      Number of events with at least the following durations
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
```

```
          179       94       60       20        3        0        0        0        0
R0087:C00003-------------------------------------------------------------------------------------
      COMPUTE API
        [APIini= 50.00: APIkdy= .9000: APIkdt= .9956]
        {APImax= 75.76: APIavg= 21.41: APImin=  1.18}
#*******************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITH INFILTRATION) - PRE DEVELOPMENT CONDITIONS
#*******************************************************************************************************
R0087:C00004------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     5.0 01:EX            35.64     .228 1987.0724_22:40   40.49 .063     .000
      [CN= 52.0: N= 3.00: Tp= 1.35]
      [IaREC= 6.00: SMIN= 95.25: SMAX=635.00: SK= .030]
      [InterEventTime=  12.00]
#*******************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITHOUT INFILTRATION) - PRE DEVELOPMENT CONDITIONS
#*******************************************************************************************************
#                  Set infiltration to 0 (CN = 99.99) for water balance analysis
#*******************************************************************************************************
R0087:C00005------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     5.0 01:INF-EX        35.64    1.007 1987.0724_15:30  240.27 .375     .000
      [CN=100.0: N= 3.00: Tp= 1.35]
      [IaREC= 6.00: SMIN=  1.39: SMAX=  9.24: SK= .030]
      [InterEventTime=  12.00]
##############################################################################
# CONTINUOUS RAINFALL DATA
##############################################################################
  ** END OF RUN :   87
*************************************************************************************************
 RUN#:COMMAND#
R0088:C00001-------------------------------------------------------------------------------------
      START
        [TZERO =    .00 hrs on 19880101]
        [METOUT=   2    (1=imperial, 2=metric output)]
        [NSTORM=   0 ]
        [NRUN  = 0088 ]
#*******************************************************************************************************
#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
#*******************************************************************************************************
#  Project Name: Barrhaven Conservancy Development
#  Project Number: 1474
#  Date        : 2021/Oct/18
#  Modeller    : J.Burnett, P.Eng.
#  Company     : J.F. Sabourin and Associates
#  License #   : 2582634
#*******************************************************************************************************
# Ottawa International Airport (1967 - 2003)
R0088:C00002-------------------------------------------------------------------------------------
  *  READ AES DATA
       [Filename  = YOW_1967_2007.123                                          ]
       [Start_date= 1988.0101: End_date= 1988.1230]
       {DT= 60.min: Length= 8760.hrs: WetHrs=  487: DryHrs= 8273: PTOT= 643.80}
       Maximum average rainfall intensities over
         1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
        25.50    18.20    12.77     7.37     3.78     1.91     1.27      .95      .94    mm/hr
        25.50    36.40    38.30    44.20    45.40    45.80    45.80    45.80    67.40    mm
       19880917 19880726 19880625 19880625 19880625 19880625 19880625 19880626 19880625  date
       Number of rainfall events per following interevent time
         1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
          165      130      109       80       66       56       49       42       26
       Number of events with at least the following durations
         1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
          164      102       71       20        5        0        0        0        0
R0088:C00003-------------------------------------------------------------------------------------
      COMPUTE API
        [APIini= 50.00: APIkdy= .9000: APIkdt= .9956]
        {APImax= 66.04: APIavg= 18.06: APImin=   .03}
#*******************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITH INFILTRATION) - PRE DEVELOPMENT CONDITIONS
#*******************************************************************************************************
R0088:C00004------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     5.0 01:EX            35.64     .275 1988.0625_13:55   37.57 .058     .000
      [CN= 52.0: N= 3.00: Tp= 1.35]
      [IaREC= 6.00: SMIN= 95.25: SMAX=635.00: SK= .030]
      [InterEventTime=  12.00]
#*******************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITHOUT INFILTRATION) - PRE DEVELOPMENT CONDITIONS
#*******************************************************************************************************
#                  Set infiltration to 0 (CN = 99.99) for water balance analysis
#*******************************************************************************************************
R0088:C00005------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     5.0 01:INF-EX        35.64    1.191 1988.0625_13:35  255.71 .397     .000
      [CN=100.0: N= 3.00: Tp= 1.35]
      [IaREC= 6.00: SMIN=  1.39: SMAX=  9.24: SK= .030]
      [InterEventTime=  12.00]
##############################################################################
# CONTINUOUS RAINFALL DATA
##############################################################################
  ** END OF RUN :   88
*************************************************************************************************
 RUN#:COMMAND#
R0089:C00001-------------------------------------------------------------------------------------
      START
        [TZERO =    .00 hrs on 19890101]
        [METOUT=   2    (1=imperial, 2=metric output)]
        [NSTORM=   0 ]
        [NRUN  = 0089 ]
#*******************************************************************************************************
#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
#*******************************************************************************************************
#  Project Name: Barrhaven Conservancy Development
#  Project Number: 1474
#  Date        : 2021/Oct/18
#  Modeller    : J.Burnett, P.Eng.
#  Company     : J.F. Sabourin and Associates
#  License #   : 2582634
#*******************************************************************************************************
# Ottawa International Airport (1967 - 2003)
R0089:C00002-------------------------------------------------------------------------------------
  *  READ AES DATA
       [Filename  = YOW_1967_2007.123                                          ]
       [Start_date= 1989.0101: End_date= 1989.1231]
       {DT= 60.min: Length= 8040.hrs: WetHrs=  422: DryHrs= 7618: PTOT= 523.20}
       Maximum average rainfall intensities over
         1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
        22.70    12.60     8.93     5.75     3.03     1.69     1.14      .86      .59    mm/hr
        22.70    25.20    26.80    34.50    36.30    40.60    40.90    41.30    42.50    mm
       19890727 19890727 19890727 19890727 19890727 19891020 19891021 19891021 19891022  date
       Number of rainfall events per following interevent time
         1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
          151      125      108       89       67       53       42       37       29
       Number of events with at least the following durations
         1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
          150       81       52       19        5        0        0        0        0
R0089:C00003-------------------------------------------------------------------------------------
      COMPUTE API
        [APIini= 50.00: APIkdy= .9000: APIkdt= .9956]
        {APImax= 55.10: APIavg= 16.03: APImin=   .02}
#*******************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITH INFILTRATION) - PRE DEVELOPMENT CONDITIONS
#*******************************************************************************************************
R0089:C00004------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     5.0 01:EX            35.64     .107 1989.0727_16:25   22.97 .044     .000
      [CN= 52.0: N= 3.00: Tp= 1.35]
      [IaREC= 6.00: SMIN= 95.25: SMAX=635.00: SK= .030]
      [InterEventTime=  12.00]
#*******************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITHOUT INFILTRATION) - PRE DEVELOPMENT CONDITIONS
#*******************************************************************************************************
#                  Set infiltration to 0 (CN = 99.99) for water balance analysis
#*******************************************************************************************************
R0089:C00005------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     5.0 01:INF-EX        35.64     .834 1989.0727_16:05  197.69 .378     .000
      [CN=100.0: N= 3.00: Tp= 1.35]
      [IaREC= 6.00: SMIN=  1.39: SMAX=  9.24: SK= .030]
      [InterEventTime=  12.00]
##############################################################################
# CONTINUOUS RAINFALL DATA
##############################################################################
  ** END OF RUN :   89
*************************************************************************************************
 RUN#:COMMAND#
R0090:C00001-------------------------------------------------------------------------------------
      START
        [TZERO =    .00 hrs on 19900101]
        [METOUT=   2    (1=imperial, 2=metric output)]
        [NSTORM=   0 ]
        [NRUN  = 0090 ]
#*******************************************************************************************************
#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
#*******************************************************************************************************
#  Project Name: Barrhaven Conservancy Development
#  Project Number: 1474
#  Date        : 2021/Oct/18
#  Modeller    : J.Burnett, P.Eng.
#  Company     : J.F. Sabourin and Associates
#  License #   : 2582634
#*******************************************************************************************************
# Ottawa International Airport (1967 - 2003)
R0090:C00002-------------------------------------------------------------------------------------
  *  READ AES DATA
       [Filename  = YOW_1967_2007.123                                          ]
       [Start_date= 1990.0101: End_date= 1990.1231]
       {DT= 60.min: Length= 7344.hrs: WetHrs=  618: DryHrs= 6726: PTOT= 727.80}
       Maximum average rainfall intensities over
         1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
        20.60    12.25     9.60     5.58     4.43     2.25     1.50     1.23     1.06    mm/hr
        20.60    24.50    28.80    33.50    53.20    54.00    54.00    59.00    76.60    mm
       19900720 19900720 19900828 19900828 19900720 19900720 19900720 19900722 19900723  date
       Number of rainfall events per following interevent time
         1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
          204      156      141      107       84       66       56       47       33
       Number of events with at least the following durations
         1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
          203      116       75       31        6        1        0        0        0
R0090:C00003-------------------------------------------------------------------------------------
      COMPUTE API
        [APIini= 50.00: APIkdy= .9000: APIkdt= .9956]
        {APImax= 75.10: APIavg= 23.47: APImin=  3.10}
#*******************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITH INFILTRATION) - PRE DEVELOPMENT CONDITIONS
#*******************************************************************************************************
R0090:C00004------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     5.0 01:EX            35.64     .252 1990.0720_14:20   47.97 .066     .000
      [CN= 52.0: N= 3.00: Tp= 1.35]
      [IaREC= 6.00: SMIN= 95.25: SMAX=635.00: SK= .030]
      [InterEventTime=  12.00]
#*******************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITHOUT INFILTRATION) - PRE DEVELOPMENT CONDITIONS
#*******************************************************************************************************
#                  Set infiltration to 0 (CN = 99.99) for water balance analysis
#*******************************************************************************************************
R0090:C00005------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     5.0 01:INF-EX        35.64     .746 1990.0720_ 6:05  311.89 .429     .000
      [CN=100.0: N= 3.00: Tp= 1.35]
      [IaREC= 6.00: SMIN=  1.39: SMAX=  9.24: SK= .030]
      [InterEventTime=  12.00]
##############################################################################
# CONTINUOUS RAINFALL DATA
##############################################################################
  ** END OF RUN :   90
*************************************************************************************************
 RUN#:COMMAND#
R0091:C00001-------------------------------------------------------------------------------------
      START
        [TZERO =    .00 hrs on 19910101]
        [METOUT=   2    (1=imperial, 2=metric output)]
        [NSTORM=   0 ]
        [NRUN  = 0091 ]
#*******************************************************************************************************
#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
#*******************************************************************************************************
#  Project Name: Barrhaven Conservancy Development
#  Project Number: 1474
#  Date        : 2021/Oct/18
#  Modeller    : J.Burnett, P.Eng.
#  Company     : J.F. Sabourin and Associates
#  License #   : 2582634
#*******************************************************************************************************
# Ottawa International Airport (1967 - 2003)
R0091:C00002-------------------------------------------------------------------------------------
  *  READ AES DATA
       [Filename  = YOW_1967_2007.123                                          ]
       [Start_date= 1991.0101: End_date= 1991.1231]
       {DT= 60.min: Length= 8040.hrs: WetHrs=  486: DryHrs= 7554: PTOT= 556.00}
       Maximum average rainfall intensities over
         1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
        11.30     9.90     6.87     4.10     2.53     1.72     1.28     1.08      .79    mm/hr
        11.30    19.80    20.60    24.60    30.40    41.20    46.00    51.60    57.00    mm
       19910409 19910409 19910409 19910409 19911016 19910422 19910410 19910410 19910423  date
       Number of rainfall events per following interevent time
         1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
          165      137      127      102       80       63       52       45       38
       Number of events with at least the following durations
         1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
          164       89       56       21        6        1        0        0        0
R0091:C00003-------------------------------------------------------------------------------------
      COMPUTE API
        [APIini= 50.00: APIkdy= .9000: APIkdt= .9956]
        {APImax= 72.80: APIavg= 16.88: APImin=   .26}
#*******************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITH INFILTRATION) - PRE DEVELOPMENT CONDITIONS
#*******************************************************************************************************
R0091:C00004------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     5.0 01:EX            35.64     .099 1991.0410_ 4:15   25.52 .046     .000
      [CN= 52.0: N= 3.00: Tp= 1.35]
      [IaREC= 6.00: SMIN= 95.25: SMAX=635.00: SK= .030]
      [InterEventTime=  12.00]
#*******************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITHOUT INFILTRATION) - PRE DEVELOPMENT CONDITIONS
#*******************************************************************************************************
#                  Set infiltration to 0 (CN = 99.99) for water balance analysis
#*******************************************************************************************************
R0091:C00005------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     5.0 01:INF-EX        35.64     .467 1991.0409_ 1:55  197.89 .356     .000
      [CN=100.0: N= 3.00: Tp= 1.35]
      [IaREC= 6.00: SMIN=  1.39: SMAX=  9.24: SK= .030]
      [InterEventTime=  12.00]
##############################################################################
# CONTINUOUS RAINFALL DATA
##############################################################################
  ** END OF RUN :   91
*************************************************************************************************
 RUN#:COMMAND#
R0092:C00001-------------------------------------------------------------------------------------
      START
        [TZERO =    .00 hrs on 19920101]
        [METOUT=   2    (1=imperial, 2=metric output)]
        [NSTORM=   0 ]
        [NRUN  = 0092 ]
#*******************************************************************************************************
#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
#*******************************************************************************************************
#  Project Name: Barrhaven Conservancy Development
#  Project Number: 1474
#  Date        : 2021/Oct/18
#  Modeller    : J.Burnett, P.Eng.
#  Company     : J.F. Sabourin and Associates
#  License #   : 2582634
#*******************************************************************************************************
# Ottawa International Airport (1967 - 2003)
R0092:C00002-------------------------------------------------------------------------------------
  *  READ AES DATA
       [Filename  = YOW_1967_2007.123                                          ]
       [Start_date= 1992.0101: End_date= 1992.1230]
       {DT= 60.min: Length= 8760.hrs: WetHrs=  551: DryHrs= 8209: PTOT= 732.80}
       Maximum average rainfall intensities over
         1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
        31.50    18.00    13.30     7.22     4.14     2.26     1.51     1.51     1.02    mm/hr
        31.50    36.00    39.90    43.30    49.70    54.20    54.20    72.60    73.60    mm
       19920804 19920804 19920804 19920804 19920717 19920718 19920718 19920719 19920720  date
       Number of rainfall events per following interevent time
         1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
          190      151      132      100       84       69       55       47       38
       Number of events with at least the following durations
         1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
          189      109       70       22        5        1        0        0        0
R0092:C00003-------------------------------------------------------------------------------------
      COMPUTE API
        [APIini= 50.00: APIkdy= .9000: APIkdt= .9956]
        {APImax= 97.62: APIavg= 20.33: APImin=  1.07}
#*******************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITH INFILTRATION) - PRE DEVELOPMENT CONDITIONS
#*******************************************************************************************************
R0092:C00004------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     5.0 01:EX            35.64     .389 1992.0717_19:35   55.22 .075     .000
      [CN= 52.0: N= 3.00: Tp= 1.35]
      [IaREC= 6.00: SMIN= 95.25: SMAX=635.00: SK= .030]
      [InterEventTime=  12.00]
#*******************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITHOUT INFILTRATION) - PRE DEVELOPMENT CONDITIONS
#*******************************************************************************************************
#                  Set infiltration to 0 (CN = 99.99) for water balance analysis
#*******************************************************************************************************
R0092:C00005------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     5.0 01:INF-EX        35.64    1.234 1992.0804_15:00  326.37 .445     .000
      [CN=100.0: N= 3.00: Tp= 1.35]
      [IaREC= 6.00: SMIN=  1.39: SMAX=  9.24: SK= .030]
      [InterEventTime=  12.00]
##############################################################################
# CONTINUOUS RAINFALL DATA
```

```
################################################################################
  ** END OF RUN :   92

 *****************************************************************************************

 RUN#:COMMAND#
R0093:C00001-----------------------------------------------------------------------------------
     START
       [TZERO =    .00 hrs on 19930101]
       [METOUT=   2    (1=imperial, 2=metric output)]
       [NSTORM=   0 ]
       [NRUN  = 0093 ]
#**************************************************************************************************************
#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
#**************************************************************************************************************
#  Project Name: Barrhaven Conservancy Development
#  Project Number: 1474
#  Date        : 2021/Oct/18
#  Modeller    : J.Burnett, P.Eng.
#  Company     : J.F. Sabourin and Associates
#  License #   : 2582634
#**************************************************************************************************************
# Ottawa International Airport (1967 - 2003)
R0093:C00002-----------------------------------------------------------------------------------
  *  READ AES DATA
       [Filename  = YOW_1967_2007.123                                            ]
       [Start_date= 1993.0101: End_date= 1993.1231]
       {DT= 60.min: Length= 8760.hrs: WetHrs=  585: DryHrs= 8175: PTOT= 721.30}
      Maximum average rainfall intensities over
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
       12.60     6.60     4.83     3.72     3.58     2.31     1.61     1.21      .81    mm/hr
       12.60    13.20    14.50    22.30    43.00    55.50    58.10    58.10    58.10    mm
      19930703 19930703 19931127 19931128 19931128 19931128 19931128 19931128 19931129  date
      Number of rainfall events per following interevent time
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         191      154      137      111       91       73       57       48       34
      Number of events with at least the following durations
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         190      110       66       27        7        2        0        0        0
R0093:C00003-----------------------------------------------------------------------------------
     COMPUTE API
       [APIini= 50.00: APIkdy= .9000: APIkdt= .9956]
       {APImax= 66.56: APIavg= 20.01: APImin=   .11}
#**************************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITH INFILTRATION) - PRE DEVELOPMENT CONDITIONS
#**************************************************************************************************************
R0093:C00004------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     5.0 01:EX            35.64     .142 1993.1128_ 7:45   34.73 .048     .000
       [CN= 52.0: N= 3.00: Tp= 1.35]
       [IaREC= 6.00: SMIN= 95.25: SMAX=635.00: SK= .030]
       [InterEventTime=  12.00]
#**************************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITHOUT INFILTRATION) - PRE DEVELOPMENT CONDITIONS
#**************************************************************************************************************
#                  Set infiltration to 0 (CN = 99.99) for water balance analysis
#**************************************************************************************************************
R0093:C00005------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     5.0 01:INF-EX        35.64     .424 1993.1128_ 7:25  264.26 .366     .000
       [CN=100.0: N= 3.00: Tp= 1.35]
       [IaREC= 6.00: SMIN=  1.39: SMAX=  9.24: SK= .030]
       [InterEventTime=  12.00]
################################################################################
# CONTINUOUS RAINFALL DATA
################################################################################
  ** END OF RUN :   93

 *****************************************************************************************

 RUN#:COMMAND#
R0094:C00001-----------------------------------------------------------------------------------
     START
       [TZERO =    .00 hrs on 19940101]
       [METOUT=   2    (1=imperial, 2=metric output)]
       [NSTORM=   0 ]
       [NRUN  = 0094 ]
#**************************************************************************************************************
#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
#**************************************************************************************************************
#  Project Name: Barrhaven Conservancy Development
#  Project Number: 1474
#  Date        : 2021/Oct/18
#  Modeller    : J.Burnett, P.Eng.
#  Company     : J.F. Sabourin and Associates
#  License #   : 2582634
#**************************************************************************************************************
# Ottawa International Airport (1967 - 2003)
R0094:C00002-----------------------------------------------------------------------------------
  *  READ AES DATA
       [Filename  = YOW_1967_2007.123                                            ]
       [Start_date= 1994.0101: End_date= 1994.1231]
       {DT= 60.min: Length= 8760.hrs: WetHrs=  342: DryHrs= 8418: PTOT= 540.20}
      Maximum average rainfall intensities over
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
       22.60    11.90     8.43     5.42     2.92     1.79     1.19      .89     1.15    mm/hr
       22.60    23.80    25.30    32.50    35.00    42.90    42.90    42.90    82.60    mm
      19940629 19940629 19940627 19940625 19940625 19940625 19940626 19940626 19940627  date
      Number of rainfall events per following interevent time
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         138      115      101       79       62       48       39       34       26
      Number of events with at least the following durations
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         137       72       48       12        1        0        0        0        0
R0094:C00003-----------------------------------------------------------------------------------
     COMPUTE API
       [APIini= 50.00: APIkdy= .9000: APIkdt= .9956]
       {APImax= 97.84: APIavg= 15.35: APImin=   .02}
#**************************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITH INFILTRATION) - PRE DEVELOPMENT CONDITIONS
#**************************************************************************************************************
R0094:C00004------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     5.0 01:EX            35.64     .127 1994.0627_11:50   34.08 .063     .000
       [CN= 52.0: N= 3.00: Tp= 1.35]
       [IaREC= 6.00: SMIN= 95.25: SMAX=635.00: SK= .030]
       [InterEventTime=  12.00]
#**************************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITHOUT INFILTRATION) - PRE DEVELOPMENT CONDITIONS
#**************************************************************************************************************
#                  Set infiltration to 0 (CN = 99.99) for water balance analysis
#**************************************************************************************************************
R0094:C00005------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     5.0 01:INF-EX        35.64     .680 1994.0627_11:10  227.40 .421     .000
       [CN=100.0: N= 3.00: Tp= 1.35]
       [IaREC= 6.00: SMIN=  1.39: SMAX=  9.24: SK= .030]
       [InterEventTime=  12.00]
################################################################################
# CONTINUOUS RAINFALL DATA
################################################################################
  ** END OF RUN :   94

 *****************************************************************************************

 RUN#:COMMAND#
R0095:C00001-----------------------------------------------------------------------------------
     START
       [TZERO =    .00 hrs on 19950101]
       [METOUT=   2    (1=imperial, 2=metric output)]
       [NSTORM=   0 ]
       [NRUN  = 0095 ]
#**************************************************************************************************************
#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
#**************************************************************************************************************
#  Project Name: Barrhaven Conservancy Development
#  Project Number: 1474
#  Date        : 2021/Oct/18
#  Modeller    : J.Burnett, P.Eng.
#  Company     : J.F. Sabourin and Associates
#  License #   : 2582634
#**************************************************************************************************************
# Ottawa International Airport (1967 - 2003)
R0095:C00002-----------------------------------------------------------------------------------
  *  READ AES DATA
       [Filename  = YOW_1967_2007.123                                            ]
       [Start_date= 1995.0101: End_date= 1995.1231]
       {DT= 60.min: Length= 8040.hrs: WetHrs=  332: DryHrs= 7708: PTOT= 538.50}
      Maximum average rainfall intensities over
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
       16.90    13.25    11.33     8.98     6.35     3.48     2.95     2.21     1.48    mm/hr
       16.90    26.50    34.00    53.90    76.20    83.40   106.20   106.20   106.20    mm
      19950603 19950603 19951006 19951006 19951006 19951006 19951007 19951007 19951008  date
      Number of rainfall events per following interevent time
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
          91       73       65       55       47       41       34       31       25
      Number of events with at least the following durations
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
          90       54       35       16        7        1        0        0        0
R0095:C00003-----------------------------------------------------------------------------------
     COMPUTE API
       [APIini= 50.00: APIkdy= .9000: APIkdt= .9956]
       {APImax= 99.57: APIavg= 16.58: APImin=   .00}
#**************************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITH INFILTRATION) - PRE DEVELOPMENT CONDITIONS
#**************************************************************************************************************
R0095:C00004------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     5.0 01:EX            35.64     .499 1995.0603_ 9:45  107.02 .199     .000
       [CN= 52.0: N= 3.00: Tp= 1.35]
       [IaREC= 6.00: SMIN= 95.25: SMAX=635.00: SK= .030]
       [InterEventTime=  12.00]
#**************************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITHOUT INFILTRATION) - PRE DEVELOPMENT CONDITIONS
#**************************************************************************************************************
#                  Set infiltration to 0 (CN = 99.99) for water balance analysis
#**************************************************************************************************************
R0095:C00005------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     5.0 01:INF-EX        35.64    1.101 1995.1006_ 6:20  327.35 .608     .000
       [CN=100.0: N= 3.00: Tp= 1.35]
       [IaREC= 6.00: SMIN=  1.39: SMAX=  9.24: SK= .030]
       [InterEventTime=  12.00]
################################################################################
# CONTINUOUS RAINFALL DATA
################################################################################
  ** END OF RUN :   95

 *****************************************************************************************

 RUN#:COMMAND#
R0096:C00001-----------------------------------------------------------------------------------
     START
       [TZERO =    .00 hrs on 19960101]
       [METOUT=   2    (1=imperial, 2=metric output)]
       [NSTORM=   0 ]
       [NRUN  = 0096 ]
#**************************************************************************************************************
#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
#**************************************************************************************************************
#  Project Name: Barrhaven Conservancy Development
#  Project Number: 1474
#  Date        : 2021/Oct/18
#  Modeller    : J.Burnett, P.Eng.
#  Company     : J.F. Sabourin and Associates
#  License #   : 2582634
#**************************************************************************************************************
# Ottawa International Airport (1967 - 2003)
R0096:C00002-----------------------------------------------------------------------------------
  *  READ AES DATA
       [Filename  = YOW_1967_2007.123                                            ]
       [Start_date= 1996.0101: End_date= 1996.1230]
       {DT= 60.min: Length= 6552.hrs: WetHrs=  387: DryHrs= 6165: PTOT= 512.20}
      Maximum average rainfall intensities over
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
       18.50    13.55     9.03     5.42     2.93     1.84     1.32     1.02      .70    mm/hr
       18.50    27.10    27.10    32.50    35.10    44.10    47.50    49.00    50.30    mm
      19960731 19960731 19960731 19960731 19960731 19961109 19961109 19961109 19961109  date
      Number of rainfall events per following interevent time
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         132      104       93       71       59       43       36       31       24
      Number of events with at least the following durations
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         131       72       50       19        2        1        0        0        0
R0096:C00003-----------------------------------------------------------------------------------
     COMPUTE API
       [APIini= 50.00: APIkdy= .9000: APIkdt= .9956]
       {APImax= 63.22: APIavg= 19.39: APImin=   .71}
#**************************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITH INFILTRATION) - PRE DEVELOPMENT CONDITIONS
#**************************************************************************************************************
R0096:C00004------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     5.0 01:EX            35.64     .121 1996.0731_16:45   25.52 .050     .000
       [CN= 52.0: N= 3.00: Tp= 1.35]
       [IaREC= 6.00: SMIN= 95.25: SMAX=635.00: SK= .030]
       [InterEventTime=  12.00]
#**************************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITHOUT INFILTRATION) - PRE DEVELOPMENT CONDITIONS
#**************************************************************************************************************
#                  Set infiltration to 0 (CN = 99.99) for water balance analysis
#**************************************************************************************************************
R0096:C00005------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     5.0 01:INF-EX        35.64     .767 1996.0731_16:30  195.06 .381     .000
       [CN=100.0: N= 3.00: Tp= 1.35]
       [IaREC= 6.00: SMIN=  1.39: SMAX=  9.24: SK= .030]
       [InterEventTime=  12.00]
################################################################################
# CONTINUOUS RAINFALL DATA
################################################################################
  ** END OF RUN :   96

 *****************************************************************************************

 RUN#:COMMAND#
R0097:C00001-----------------------------------------------------------------------------------
     START
       [TZERO =    .00 hrs on 19970101]
       [METOUT=   2    (1=imperial, 2=metric output)]
       [NSTORM=   0 ]
       [NRUN  = 0097 ]
#**************************************************************************************************************
#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
#**************************************************************************************************************
#  Project Name: Barrhaven Conservancy Development
#  Project Number: 1474
#  Date        : 2021/Oct/18
#  Modeller    : J.Burnett, P.Eng.
#  Company     : J.F. Sabourin and Associates
#  License #   : 2582634
#**************************************************************************************************************
# Ottawa International Airport (1967 - 2003)
R0097:C00002-----------------------------------------------------------------------------------
  *  READ AES DATA
       [Filename  = YOW_1967_2007.123                                            ]
       [Start_date= 1997.0101: End_date= 1997.1231]
       {DT= 60.min: Length= 8040.hrs: WetHrs=  379: DryHrs= 7661: PTOT= 433.20}
      Maximum average rainfall intensities over
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
       12.50     7.60     5.67     4.43     2.91     1.68     1.12      .84      .63    mm/hr
       12.50    15.20    17.00    26.60    34.90    40.40    40.40    40.40    45.30    mm
      19970622 19970622 19970622 19970221 19970222 19970222 19970222 19970222 19970222  date
      Number of rainfall events per following interevent time
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         113       92       83       67       61       55       48       43       30
      Number of events with at least the following durations
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         112       70       46       20        4        0        0        0        0
R0097:C00003-----------------------------------------------------------------------------------
     COMPUTE API
       [APIini= 50.00: APIkdy= .9000: APIkdt= .9956]
       {APImax= 50.00: APIavg= 13.66: APImin=   .27}
#**************************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITH INFILTRATION) - PRE DEVELOPMENT CONDITIONS
#**************************************************************************************************************
R0097:C00004------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     5.0 01:EX            35.64     .074 1997.0222_ 1:55   15.10 .035     .000
       [CN= 52.0: N= 3.00: Tp= 1.35]
       [IaREC= 6.00: SMIN= 95.25: SMAX=635.00: SK= .030]
       [InterEventTime=  12.00]
#**************************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITHOUT INFILTRATION) - PRE DEVELOPMENT CONDITIONS
#**************************************************************************************************************
#                  Set infiltration to 0 (CN = 99.99) for water balance analysis
#**************************************************************************************************************
R0097:C00005------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     5.0 01:INF-EX        35.64     .488 1997.0221_21:25  161.58 .373     .000
       [CN=100.0: N= 3.00: Tp= 1.35]
       [IaREC= 6.00: SMIN=  1.39: SMAX=  9.24: SK= .030]
       [InterEventTime=  12.00]
################################################################################
# CONTINUOUS RAINFALL DATA
################################################################################
  ** END OF RUN :   97

 *****************************************************************************************

 RUN#:COMMAND#
R0098:C00001-----------------------------------------------------------------------------------
     START
       [TZERO =    .00 hrs on 19980101]
       [METOUT=   2    (1=imperial, 2=metric output)]
       [NSTORM=   0 ]
       [NRUN  = 0098 ]
#**************************************************************************************************************
#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
#**************************************************************************************************************
#  Project Name: Barrhaven Conservancy Development
#  Project Number: 1474
#  Date        : 2021/Oct/18
#  Modeller    : J.Burnett, P.Eng.
#  Company     : J.F. Sabourin and Associates
#  License #   : 2582634
```

```
#****************************************************************************************************
# Ottawa International Airport (1967 - 2003)
R0098:C00002--------------------------------------------------------------------------
  *  READ AES DATA
      [Filename  = YOW_1967_2007.123                                            ]
      [Start_date= 1998.0101: End_date= 1998.1231]
      {DT= 60.min: Length= 5088.hrs: WetHrs=  291: DryHrs= 4797: PTOT= 440.30}
      Maximum average rainfall intensities over
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
       15.80     8.90     7.60     4.00     2.54     1.82     1.27      .95      .76    mm/hr
       15.80    17.80    22.80    24.00    30.50    43.60    45.80    45.80    54.60    mm
      19980716 19980627 19980927 19980927 19980927 19980927 19980928 19980928 19980615  date
      Number of rainfall events per following interevent time
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         126      104       95       78       63       42       37       32       21
      Number of events with at least the following durations
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         125       64       43        8        1        0        0        0        0
R0098:C00003--------------------------------------------------------------------------
     COMPUTE API
      [APIini= 50.00: APIkdy= .9000: APIkdt= .9956]
      {APImax= 57.22: APIavg= 21.28: APImin=  1.69}
#****************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITH INFILTRATION) - PRE DEVELOPMENT CONDITIONS
#****************************************************************************************************
R0098:C00004------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     5.0 01:EX            35.64     .081 1998.0927_15:20   17.72 .040     .000
      [CN= 52.0: N= 3.00: Tp= 1.35]
      [IaREC= 6.00: SMIN= 95.25: SMAX=635.00: SK= .030]
      [InterEventTime=  12.00]
#****************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITHOUT INFILTRATION) - PRE DEVELOPMENT CONDITIONS
#****************************************************************************************************
#                  Set infiltration to 0 (CN = 99.99) for water balance analysis
#****************************************************************************************************
R0098:C00005------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     5.0 01:INF-EX        35.64     .496 1998.0627_ 2:05  163.10 .370     .000
      [CN=100.0: N= 3.00: Tp= 1.35]
      [IaREC= 6.00: SMIN=  1.39: SMAX=  9.24: SK= .030]
      [InterEventTime=  12.00]
####################################################################
# CONTINUOUS RAINFALL DATA
####################################################################
  ** END OF RUN :   98

**************************************************************************************





 RUN#:COMMAND#
R0099:C00001--------------------------------------------------------------------------
     START
      [TZERO =    .00 hrs on 19990101]
      [METOUT=   2    (1=imperial, 2=metric output)]
      [NSTORM=   0 ]
      [NRUN  = 0099 ]
#****************************************************************************************************
#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
#****************************************************************************************************
#  Project Name: Barrhaven Conservancy Development
#  Project Number: 1474
#  Date         : 2021/Oct/18
#  Modeller     : J.Burnett, P.Eng.
#  Company      : J.F. Sabourin and Associates
#  License #    : 2582634
#****************************************************************************************************
# Ottawa International Airport (1967 - 2003)
R0099:C00002--------------------------------------------------------------------------
  *  READ AES DATA
      [Filename  = YOW_1967_2007.123                                            ]
      [Start_date= 1999.0101: End_date= 1999.1231]
      {DT= 60.min: Length= 4440.hrs: WetHrs=  247: DryHrs= 4193: PTOT= 424.40}
      Maximum average rainfall intensities over
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
       17.50    10.10     9.03     6.57     3.31     1.65     1.45     1.22      .97    mm/hr
       17.50    20.20    27.10    39.40    39.70    39.70    52.20    58.60    69.50    mm
      19990717 19990717 19990906 19990906 19990906 19990906 19990907 19990908 19990908  date
      Number of rainfall events per following interevent time
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         102       80       70       63       56       39       31       28       18
      Number of events with at least the following durations
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         101       57       31       10        1        0        0        0        0
R0099:C00003--------------------------------------------------------------------------
     COMPUTE API
      [APIini= 50.00: APIkdy= .9000: APIkdt= .9956]
      {APImax= 69.51: APIavg= 23.97: APImin=  1.93}
#****************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITH INFILTRATION) - PRE DEVELOPMENT CONDITIONS
#****************************************************************************************************
R0099:C00004------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     5.0 01:EX            35.64     .115 1999.0906_10:30   18.48 .044     .000
      [CN= 52.0: N= 3.00: Tp= 1.35]
      [IaREC= 6.00: SMIN= 95.25: SMAX=635.00: SK= .030]
      [InterEventTime=  12.00]
#****************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITHOUT INFILTRATION) - PRE DEVELOPMENT CONDITIONS
#****************************************************************************************************
#                  Set infiltration to 0 (CN = 99.99) for water balance analysis
#****************************************************************************************************
R0099:C00005------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     5.0 01:INF-EX        35.64     .745 1999.0906_ 9:20  171.71 .405     .000
      [CN=100.0: N= 3.00: Tp= 1.35]
      [IaREC= 6.00: SMIN=  1.39: SMAX=  9.24: SK= .030]
      [InterEventTime=  12.00]
####################################################################
# CONTINUOUS RAINFALL DATA
####################################################################
  ** END OF RUN :   99

**************************************************************************************





 RUN#:COMMAND#
R0100:C00001--------------------------------------------------------------------------
     START
      [TZERO =    .00 hrs on 20000101]
      [METOUT=   2    (1=imperial, 2=metric output)]
      [NSTORM=   0 ]
      [NRUN  = 0100 ]
#****************************************************************************************************
#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
#****************************************************************************************************
#  Project Name: Barrhaven Conservancy Development
#  Project Number: 1474
#  Date         : 2021/Oct/18
#  Modeller     : J.Burnett, P.Eng.
#  Company      : J.F. Sabourin and Associates
#  License #    : 2582634
#****************************************************************************************************
# Ottawa International Airport (1967 - 2003)
R0100:C00002--------------------------------------------------------------------------
  *  READ AES DATA
      [Filename  = YOW_1967_2007.123                                            ]
      [Start_date= 2000.0101: End_date= 2000.1230]
      {DT= 60.min: Length= 5160.hrs: WetHrs=  401: DryHrs= 4759: PTOT= 535.90}
      Maximum average rainfall intensities over
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
       14.70     9.60     8.03     6.43     3.89     1.95     1.30     1.03      .84    mm/hr
       14.70    19.20    24.10    38.60    46.70    46.70    46.80    49.30    60.40    mm
      20000625 20000625 20000625 20000625 20000625 20000625 20000626 20000510 20000511  date
      Number of rainfall events per following interevent time
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         156      125      110       86       67       46       34       30       23
      Number of events with at least the following durations
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         155       82       49       16        2        0        0        0        0
R0100:C00003--------------------------------------------------------------------------
     COMPUTE API
      [APIini= 50.00: APIkdy= .9000: APIkdt= .9956]
      {APImax= 76.65: APIavg= 25.66: APImin=  5.70}
#****************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITH INFILTRATION) - PRE DEVELOPMENT CONDITIONS
#****************************************************************************************************
R0100:C00004------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     5.0 01:EX            35.64     .270 2000.0625_10:55   31.76 .059     .000
      [CN= 52.0: N= 3.00: Tp= 1.35]
      [IaREC= 6.00: SMIN= 95.25: SMAX=635.00: SK= .030]
      [InterEventTime=  12.00]
#****************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITHOUT INFILTRATION) - PRE DEVELOPMENT CONDITIONS
#****************************************************************************************************
#                  Set infiltration to 0 (CN = 99.99) for water balance analysis
#****************************************************************************************************
R0100:C00005------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     5.0 01:INF-EX        35.64     .816 2000.0625_10:40  214.65 .401     .000
      [CN=100.0: N= 3.00: Tp= 1.35]
      [IaREC= 6.00: SMIN=  1.39: SMAX=  9.24: SK= .030]
      [InterEventTime=  12.00]
####################################################################
# CONTINUOUS RAINFALL DATA
####################################################################
  ** END OF RUN :  101

**************************************************************************************






 RUN#:COMMAND#
R0102:C00001--------------------------------------------------------------------------
     START
      [TZERO =    .00 hrs on 20020101]
      [METOUT=   2    (1=imperial, 2=metric output)]
      [NSTORM=   0 ]
      [NRUN  = 0102 ]
#****************************************************************************************************
#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
#****************************************************************************************************
#  Project Name: Barrhaven Conservancy Development
#  Project Number: 1474
#  Date         : 2021/Oct/18
#  Modeller     : J.Burnett, P.Eng.
#  Company      : J.F. Sabourin and Associates
#  License #    : 2582634
#****************************************************************************************************
# Ottawa International Airport (1967 - 2003)
R0102:C00002--------------------------------------------------------------------------
  *  READ AES DATA
      [Filename  = YOW_1967_2007.123                                            ]
      [Start_date= 2002.0101: End_date= 2002.1231]
      {DT= 60.min: Length= 5088.hrs: WetHrs=  304: DryHrs= 4784: PTOT= 551.50}
      Maximum average rainfall intensities over
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
       45.00    26.75    18.40     9.48     4.74     2.48     2.08     1.56     1.04    mm/hr
       45.00    53.50    55.20    56.90    56.90    59.50    74.90    74.90    74.90    mm
      20020627 20020627 20020627 20020627 20020627 20020627 20020627 20020628 20020629  date
      Number of rainfall events per following interevent time
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         100       83       78       56       47       41       36       34       25
      Number of events with at least the following durations
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         100       59       33       13        5        0        0        0        0
R0102:C00003--------------------------------------------------------------------------
     COMPUTE API
      [APIini= 50.00: APIkdy= .9000: APIkdt= .9956]
      {APImax=114.06: APIavg= 26.37: APImin=  4.40}
#****************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITH INFILTRATION) - PRE DEVELOPMENT CONDITIONS
#****************************************************************************************************
R0102:C00004------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     5.0 01:EX            35.64     .595 2002.0627_15:10   62.73 .114     .000
      [CN= 52.0: N= 3.00: Tp= 1.35]
      [IaREC= 6.00: SMIN= 95.25: SMAX=635.00: SK= .030]
      [InterEventTime=  12.00]
#****************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITHOUT INFILTRATION) - PRE DEVELOPMENT CONDITIONS
#****************************************************************************************************
#                  Set infiltration to 0 (CN = 99.99) for water balance analysis
#****************************************************************************************************
R0102:C00005------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     5.0 01:INF-EX        35.64    1.806 2002.0627_14:55  294.04 .533     .000
      [CN=100.0: N= 3.00: Tp= 1.35]
      [IaREC= 6.00: SMIN=  1.39: SMAX=  9.24: SK= .030]
      [InterEventTime=  12.00]
####################################################################
# CONTINUOUS RAINFALL DATA
####################################################################
  ** END OF RUN :  102

**************************************************************************************





 RUN#:COMMAND#
R0103:C00001--------------------------------------------------------------------------
     START
      [TZERO =    .00 hrs on 20030101]
      [METOUT=   2    (1=imperial, 2=metric output)]
      [NSTORM=   0 ]
      [NRUN  = 0103 ]
#****************************************************************************************************
#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
#****************************************************************************************************
#  Project Name: Barrhaven Conservancy Development
#  Project Number: 1474
#  Date         : 2021/Oct/18
#  Modeller     : J.Burnett, P.Eng.
#  Company      : J.F. Sabourin and Associates
#  License #    : 2582634
#****************************************************************************************************
# Ottawa International Airport (1967 - 2003)
R0103:C00002--------------------------------------------------------------------------
  *  READ AES DATA
      [Filename  = YOW_1967_2007.123                                            ]
      [Start_date= 2003.0101: End_date= 2003.1231]
      {DT= 60.min: Length= 4440.hrs: WetHrs=  406: DryHrs= 4034: PTOT= 554.60}
      Maximum average rainfall intensities over
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
       15.10    10.00     7.13     4.28     3.18     1.86     1.25      .94      .81    mm/hr
       15.10    20.00    21.40    25.70    38.20    44.60    44.90    45.10    58.30    mm
      20030711 20030711 20030711 20030711 20031021 20031015 20030525 20030526 20030527  date
      Number of rainfall events per following interevent time
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         145      127      109       86       64       45       38       25       15
      Number of events with at least the following durations
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         144       80       43       13        5        1        0        0        0
R0103:C00003--------------------------------------------------------------------------
     COMPUTE API
      [APIini= 50.00: APIkdy= .9000: APIkdt= .9956]
      {APImax= 72.10: APIavg= 28.54: APImin=  4.70}
#****************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITH INFILTRATION) - PRE DEVELOPMENT CONDITIONS
#****************************************************************************************************
R0103:C00004------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     5.0 01:EX            35.64     .173 2003.0711_17:55   43.15 .078     .000
      [CN= 52.0: N= 3.00: Tp= 1.35]
      [IaREC= 6.00: SMIN= 95.25: SMAX=635.00: SK= .030]
      [InterEventTime=  12.00]
#****************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITHOUT INFILTRATION) - PRE DEVELOPMENT CONDITIONS
#****************************************************************************************************
#                  Set infiltration to 0 (CN = 99.99) for water balance analysis
#****************************************************************************************************
R0103:C00005------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS NASHYD     5.0 01:INF-EX        35.64     .753 2003.0711_17:45  251.88 .454     .000
      [CN=100.0: N= 3.00: Tp= 1.35]
      [IaREC= 6.00: SMIN=  1.39: SMAX=  9.24: SK= .030]
      [InterEventTime=  12.00]
####################################################################
# CONTINUOUS RAINFALL DATA
####################################################################
R0103:C00002--------------------------------------------------------------------------
    FINISH
----------------------------------------------------------------------------------------
**************************************************************************************
     WARNINGS / ERRORS / NOTES
     -------------------------
R0067:C00002  READ AES DATA
*** WARNING: Requested start date is less than start date in file.
*** WARNING: Missing rainfall increments were set to 0.
*** WARNING: Missing rainfall increments were set to 0.
*** WARNING: Missing rainfall increments were set to 0.
*** WARNING: Missing rainfall increments were set to 0.
*** WARNING: Missing rainfall increments were set to 0.
*** WARNING: Missing rainfall increments were set to 0.
*** WARNING: Missing rainfall increments were set to 0.
*** WARNING: Missing rainfall increments were set to 0.
*** WARNING: Missing rainfall increments were set to 0.
*** WARNING: Missing rainfall increments were set to 0.
*** WARNING: Requested start date is less than start date in file.
*** WARNING: Missing rainfall increments were set to 0.
*** WARNING: Missing rainfall increments were set to 0.
*** WARNING: Missing rainfall increments were set to 0.
*** WARNING: Missing rainfall increments were set to 0.
*** WARNING: Missing rainfall increments were set to 0.
*** WARNING: Missing rainfall increments were set to 0.
*** WARNING: Missing rainfall increments were set to 0.
*** WARNING: Missing rainfall increments were set to 0.
*** WARNING: Missing rainfall increments were set to 0.
*** WARNING: Missing rainfall increments were set to 0.
*** WARNING: Requested start date is less than start date in file.
*** WARNING: Missing rainfall increments were set to 0.
*** WARNING: Missing rainfall increments were set to 0.
*** WARNING: Missing rainfall increments were set to 0.
*** WARNING: Requested start date is less than start date in file.
*** WARNING: Missing rainfall increments were set to 0.
*** WARNING: Missing rainfall increments were set to 0.
*** WARNING: Missing rainfall increments were set to 0.
*** WARNING: Missing rainfall increments were set to 0.
*** WARNING: Missing rainfall increments were set to 0.
*** WARNING: Missing rainfall increments were set to 0.
*** WARNING: Requested start date is less than start date in file.
*** WARNING: Missing rainfall increments were set to 0.
*** WARNING: Missing rainfall increments were set to 0.
*** WARNING: Requested start date is less than start date in file.
*** WARNING: Missing rainfall increments were set to 0.
*** WARNING: Requested start date is less than start date in file.
*** WARNING: Missing rainfall increments were set to 0.
*** WARNING: Requested start date is less than start date in file.
*** WARNING: Missing rainfall increments were set to 0.
```

```
*** WARNING: Requested start date is less than start date in file.
*** WARNING: Missing rainfall increments were set to 0.
*** WARNING: Requested start date is less than start date in file.
*** WARNING: Missing rainfall increments were set to 0.
   Simulation ended on 2021-10-19     at 08:49:50
================================================================================================
```

```
20     Metric units / ID Numbers OFF
*#***************************************************************************************
*******************************
*#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
*#***************************************************************************************
*******************************
*#  Project Name: Barrhaven Conservancy Development
*#  Project Number: 1474
*#  Date          : 2021/Oct/18
*#  Modeller      : J.Burnett, P.Eng.
*#  Company       : J.F. Sabourin and Associates
*#  License #     : 2582634
*#***************************************************************************************
*******************************
START               TZERO=[1967.0101],  METOUT=[2],  NSTORM=[0],  NRUN=[67]
*%                   [""] <--storm filename, one per line for NSTORM time
*%-----------------|---------------------------------------------------------------------
------------------------------|
*# Ottawa International Airport (1967 - 2003)
READ AES DATA       AES_FILENAME=["YOW_1967_2007.123"],
                    IELEM=[123], START_DATE=[0], END_DATE=[-364]
*%-----------------|---------------------------------------------------------------------
------------------------------|
COMPUTE API         APII=[50], APIK=[0.90]/day
*%-----------------|---------------------------------------------------------------------
------------------------------|
*#***************************************************************************************
*******************************
*#                  Barrhaven Conservancy Development Phase 3 (WITH INFILTRATION)  -
POST DEVELOPMENT CONDITIONS
*#***************************************************************************************
*******************************
*%-----------------|---------------------------------------------------------------------
------------------------------|
CONTINUOUS STANDHYD NHYD=["W1"], DT=[5](min), AREA=[8.92](ha)
                    XIMP=[0.54], TIMP=[0.64], DWF=[0](cms),
                    LOSS=[1]:  Horton: Fo=[76.2](mm/hr), Fc=[13.2](mm/hr),
                    DCAY=[4.14](/hr), F=[0](mm),
                    Pervious   areas: IAper=[4.67](mm), SLPP=[2.0](%), LGP=[40](m),
                    MNP=[0.250], SCP=[0](min),
                    Impervious areas: IAimp=[1.57](mm), SLPI=[0.5](%), LGI=[244](m),
                    MNI=[0.013], SCI=[0](min),
                    Continuous simulation parameters:
                    IaRECper=[6](hrs),  IaRECimp=[1.5](hrs),
                    SMIN=[-1](mm),   SMAX=[-1](mm), SK=[0.03]/(mm),
                    InterEventTime=[12](hrs), END=-1
*%-----------------|---------------------------------------------------------------------
------------------------------|
*# LID for Outlet W1
*# Assumed trench 1.25m wide 0.4 deep, 1991m long, porosity of 0.4 with 250mm
perforated pipe
*# Total Volume provided by LID  - 344 m³
*# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
ROUTE RESERVOIR     NHYDout=["W1-LID"], NHYDin=["W1"], RDT=[5](min),
                         TABLE of ( OUTFLOW-STORAGE ) values
                                   (cms) - (ha-m)
                                 [   0.0000 ,  0.00000 ]
                                 [   0.0019 ,  0.00010 ]
                                 [   0.0020 ,  0.0344 ]
                                 [      -1   ,  -1      ]
                    NHYDovf=["W1-LID-Out"],
*%-----------------|---------------------------------------------------------------------
------------------------------|
CONTINUOUS STANDHYD NHYD=["W2"], DT=[5](min), AREA=[8.22](ha)
                    XIMP=[0.54], TIMP=[0.64], DWF=[0](cms),
                    LOSS=[1]:  Horton: Fo=[76.2](mm/hr), Fc=[13.2](mm/hr),
```

```
                        DCAY=[4.14](/hr), F=[0](mm),
                        Pervious   areas: IAper=[4.67](mm), SLPP=[2.0](%), LGP=[40](m), MNP=[0.250], SCP=[0](min),
                        Impervious areas: IAimp=[1.57](mm), SLPI=[0.5](%), LGI=[234](m), MNI=[0.013], SCI=[0](min),
                        Continuous simulation parameters:
                        IaRECper=[6](hrs),  IaRECimp=[1.5](hrs),
                        SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.03]/(mm), InterEventTime=[12](hrs), END=-1
*%-----------------|-----------------------------------------------------------------------------------------------|
*# LID for Outlet W2
*# Assumed trench 1.25m wide 0.4 deep, 1896m long, porosity of 0.4 with 250mm perforated pipe
*# Total Volume provided by LID  - 330 m³
*# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
ROUTE RESERVOIR         NHYDout=["W2-LID"], NHYDin=["W2"], RDT=[5](min),
                             TABLE of ( OUTFLOW-STORAGE ) values
                                        (cms) - (ha-m)
                                      [   0.00000 ,  0.0000 ]
                                      [   0.0018 ,  0.00010 ]
                                      [   0.0019 ,  0.0330 ]
                                      [      -1   ,  -1     ]
                        NHYDovf=["W2-LID-Out"],
*%-----------------|-----------------------------------------------------------------------------------------------|
CONTINUOUS STANDHYD     NHYD=["W3"], DT=[5](min), AREA=[9.9](ha)
                        XIMP=[0.54], TIMP=[0.64], DWF=[0](cms),
                        LOSS=[1]:  Horton: Fo=[76.2](mm/hr), Fc=[13.2](mm/hr), DCAY=[4.14](/hr), F=[0](mm),
                        Pervious   areas: IAper=[4.67](mm), SLPP=[2.0](%), LGP=[40](m), MNP=[0.250], SCP=[0](min),
                        Impervious areas: IAimp=[1.57](mm), SLPI=[0.5](%), LGI=[257](m), MNI=[0.013], SCI=[0](min),
                        Continuous simulation parameters:
                        IaRECper=[6](hrs),  IaRECimp=[1.5](hrs),
                        SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.03]/(mm), InterEventTime=[12](hrs), END=-1
*%-----------------|-----------------------------------------------------------------------------------------------|
*# LID for Outlet W3
*# Assumed trench 1.25m wide 0.4 deep, 1693m long, porosity of 0.4 with 250mm perforated pipe
*# Total Volume provided by LID  - 303 m³
*# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
ROUTE RESERVOIR         NHYDout=["W3-LID"], NHYDin=["W3"], RDT=[5](min),
                             TABLE of ( OUTFLOW-STORAGE ) values
                                        (cms) - (ha-m)
                                      [   0.00000 ,  0.0000 ]
                                      [   0.0017,  0.0001  ]
                                      [   0.0017,  0.0303 ]
                                      [      -1   ,  -1     ]
                        NHYDovf=["W3-LID-Out"],
*%-----------------|-----------------------------------------------------------------------------------------------|
CONTINUOUS STANDHYD     NHYD=["W4"], DT=[5](min), AREA=[8.6](ha)
                        XIMP=[0.54], TIMP=[0.64], DWF=[0](cms),
                        LOSS=[1]:  Horton: Fo=[76.2](mm/hr), Fc=[13.2](mm/hr), DCAY=[4.14](/hr), F=[0](mm),
                        Pervious   areas: IAper=[4.67](mm), SLPP=[2.0](%), LGP=[40](m), MNP=[0.250], SCP=[0](min),
                        Impervious areas: IAimp=[1.57](mm), SLPI=[0.5](%), LGI=[239](m), MNI=[0.013], SCI=[0](min),
                        Continuous simulation parameters:
                        IaRECper=[6](hrs),  IaRECimp=[1.5](hrs),
                        SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.03]/(mm),
```

```
                        InterEventTime=[12](hrs), END=-1
*%-----------------|---------------------------------------------------------------------
------------------------------|
*# LID for Outlet W4
*# Assumed trench 1.25m wide 0.4 deep, 1693m long, porosity of 0.4 with 250mm
perforated pipe
*# Total Volume provided by LID  - 303 m³
*# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
ROUTE RESERVOIR         NHYDout=["W4-LID"], NHYDin=["W4"], RDT=[5](min),
                             TABLE of ( OUTFLOW-STORAGE ) values
                                       (cms) - (ha-m)
                                     [   0.00000 ,  0.0000 ]
                                     [   0.0017,  0.00010 ]
                                     [   0.0017,  0.0303 ]
                                     [      -1   ,  -1      ]
                        NHYDovf=["W4-LID-Out"],
*%-----------------|---------------------------------------------------------------------
------------------------------|
*Development Without LIDs
ADD HYD                 NHYDsum=["BCD-PH3"], NHYDs to add=["W1", "W2", "W3", "W4"]
*%-----------------|---------------------------------------------------------------------
------------------------------|
*Development With LIDs
ADD HYD                 NHYDsum=["BCD-PH3-LID"], NHYDs to
add=["W1-LID-Out","W2-LID-Out","W3-LID-Out","W4-LID-Out"]
*%-----------------|---------------------------------------------------------------------
------------------------------|
*#***************************************************************************************
*******************************
*#                      Barrhaven Conservancy Development Phase 3 (WITHOUT INFILTRATION)  -
POST DEVELOPMENT CONDITIONS
*#***************************************************************************************
*******************************
*#                      Set infiltration to 0 (CN = 99.99) for water balance analysis
*#***************************************************************************************
*******************************
CONTINUOUS STANDHYD NHYD=["INF-W1"], DT=[5](min), AREA=[8.92](ha)
                        XIMP=[0.54], TIMP=[0.64], DWF=[0](cms),
                        LOSS=[2]: SCS curve number CN=[99.99],
                        Pervious   areas: IAper=[4.67](mm), SLPP=[2.0](%), LGP=[40](m),
                        MNP=[0.250], SCP=[0](min),
                        Impervious areas: IAimp=[1.57](mm), SLPI=[0.5](%), LGI=[244](m),
                        MNI=[0.013], SCI=[0](min),
                        Continuous simulation parameters:
                        IaRECper=[6](hrs),  IaRECimp=[1.5](hrs),
                        SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.03]/(mm),
                        InterEventTime=[12](hrs), END=-1
*%-----------------|---------------------------------------------------------------------
------------------------------|
CONTINUOUS STANDHYD NHYD=["INF-W2"], DT=[5](min), AREA=[8.22](ha)
                        XIMP=[0.54], TIMP=[0.64], DWF=[0](cms),
                        LOSS=[2]: SCS curve number CN=[99.99],
                        Pervious   areas: IAper=[4.67](mm), SLPP=[2.0](%), LGP=[40](m),
                        MNP=[0.250], SCP=[0](min),
                        Impervious areas: IAimp=[1.57](mm), SLPI=[0.5](%), LGI=[234](m),
                        MNI=[0.013], SCI=[0](min),
                        Continuous simulation parameters:
                        IaRECper=[6](hrs),  IaRECimp=[1.5](hrs),
                        SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.03]/(mm),
                        InterEventTime=[12](hrs), END=-1
*%-----------------|---------------------------------------------------------------------
------------------------------|
CONTINUOUS STANDHYD NHYD=["INF-W3"], DT=[5](min), AREA=[9.9](ha)
                        XIMP=[0.54], TIMP=[0.64], DWF=[0](cms),
                        LOSS=[2]: SCS curve number CN=[99.99],
                        Pervious   areas: IAper=[4.67](mm), SLPP=[2.0](%), LGP=[40](m),
```

```
                           MNP=[0.250], SCP=[0](min),
                           Impervious areas: IAimp=[1.57](mm), SLPI=[0.5](%), LGI=[257](m),
                           MNI=[0.013], SCI=[0](min),
                           Continuous simulation parameters:
                           IaRECper=[6](hrs),  IaRECimp=[1.5](hrs),
                           SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.03]/(mm),
                           InterEventTime=[12](hrs), END=-1
*%-----------------|----------------------------------------------------------------------
------------------------------|
CONTINUOUS STANDHYD NHYD=["INF-W4"], DT=[5](min), AREA=[8.6](ha)
                           XIMP=[0.54], TIMP=[0.64], DWF=[0](cms),
                           LOSS=[2]: SCS curve number CN=[99.99],
                           Pervious   areas: IAper=[4.67](mm), SLPP=[2.0](%), LGP=[40](m),
                           MNP=[0.250], SCP=[0](min),
                           Impervious areas: IAimp=[1.57](mm), SLPI=[0.5](%), LGI=[239](m),
                           MNI=[0.013], SCI=[0](min),
                           Continuous simulation parameters:
                           IaRECper=[6](hrs),  IaRECimp=[1.5](hrs),
                           SMIN=[-1](mm),  SMAX=[-1](mm), SK=[0.03]/(mm),
                           InterEventTime=[12](hrs), END=-1
*%-----------------|----------------------------------------------------------------------
------------------------------|
*Development Without Infiltration for water budget
ADD HYD                    NHYDsum=["INF-BCD-PH3"], NHYDs to add=["INF-W1", "INF-W2",
"INF-W3", "INF-W4"]
*%-----------------|----------------------------------------------------------------------
------------------------------|
*################################################################################
*# CONTINUOUS RAINFALL DATA
*################################################################################
*%-----------------|----------------------------------------------------------------------
------------------------------|
*%-----------------|----------------------------------------------------------------------
------------------------------|
START                      TZERO=[1968.0101],  METOUT=[2],  NSTORM=[0],  NRUN=[68]
*%-----------------|----------------------------------------------------------------------
------------------------------|
START                      TZERO=[1969.0101],  METOUT=[2],  NSTORM=[0],  NRUN=[69]
*%-----------------|----------------------------------------------------------------------
------------------------------|
START                      TZERO=[1970.0101],  METOUT=[2],  NSTORM=[0],  NRUN=[70]
*%-----------------|----------------------------------------------------------------------
------------------------------|
START                      TZERO=[1971.0101],  METOUT=[2],  NSTORM=[0],  NRUN=[71]
*%-----------------|----------------------------------------------------------------------
------------------------------|
START                      TZERO=[1972.0101],  METOUT=[2],  NSTORM=[0],  NRUN=[72]
*%-----------------|----------------------------------------------------------------------
------------------------------|
START                      TZERO=[1973.0101],  METOUT=[2],  NSTORM=[0],  NRUN=[73]
*%-----------------|----------------------------------------------------------------------
------------------------------|
START                      TZERO=[1974.0101],  METOUT=[2],  NSTORM=[0],  NRUN=[74]
*%-----------------|----------------------------------------------------------------------
------------------------------|
START                      TZERO=[1975.0101],  METOUT=[2],  NSTORM=[0],  NRUN=[75]
*%-----------------|----------------------------------------------------------------------
------------------------------|
START                      TZERO=[1976.0101],  METOUT=[2],  NSTORM=[0],  NRUN=[76]
*%-----------------|----------------------------------------------------------------------
------------------------------|
START                      TZERO=[1977.0101],  METOUT=[2],  NSTORM=[0],  NRUN=[77]
*%-----------------|----------------------------------------------------------------------
------------------------------|
START                      TZERO=[1978.0101],  METOUT=[2],  NSTORM=[0],  NRUN=[78]
*%-----------------|----------------------------------------------------------------------
```

```
------------------------------|
START               TZERO=[1979.0101],  METOUT=[2],  NSTORM=[0],  NRUN=[79]
*%-----------------|---------------------------------------------------------------------------------------------------|
START               TZERO=[1980.0101],  METOUT=[2],  NSTORM=[0],  NRUN=[80]
*%-----------------|---------------------------------------------------------------------------------------------------|
START               TZERO=[1981.0101],  METOUT=[2],  NSTORM=[0],  NRUN=[81]
*%-----------------|---------------------------------------------------------------------------------------------------|
START               TZERO=[1982.0101],  METOUT=[2],  NSTORM=[0],  NRUN=[82]
*%-----------------|---------------------------------------------------------------------------------------------------|
START               TZERO=[1983.0101],  METOUT=[2],  NSTORM=[0],  NRUN=[83]
*%-----------------|---------------------------------------------------------------------------------------------------|
START               TZERO=[1984.0101],  METOUT=[2],  NSTORM=[0],  NRUN=[84]
*%-----------------|---------------------------------------------------------------------------------------------------|
START               TZERO=[1985.0101],  METOUT=[2],  NSTORM=[0],  NRUN=[85]
*%-----------------|---------------------------------------------------------------------------------------------------|
START               TZERO=[1986.0101],  METOUT=[2],  NSTORM=[0],  NRUN=[86]
*%-----------------|---------------------------------------------------------------------------------------------------|
START               TZERO=[1987.0101],  METOUT=[2],  NSTORM=[0],  NRUN=[87]
*%-----------------|---------------------------------------------------------------------------------------------------|
START               TZERO=[1988.0101],  METOUT=[2],  NSTORM=[0],  NRUN=[88]
*%-----------------|---------------------------------------------------------------------------------------------------|
START               TZERO=[1989.0101],  METOUT=[2],  NSTORM=[0],  NRUN=[89]
*%-----------------|---------------------------------------------------------------------------------------------------|
START               TZERO=[1990.0101],  METOUT=[2],  NSTORM=[0],  NRUN=[90]
*%-----------------|---------------------------------------------------------------------------------------------------|
START               TZERO=[1991.0101],  METOUT=[2],  NSTORM=[0],  NRUN=[91]
*%-----------------|---------------------------------------------------------------------------------------------------|
START               TZERO=[1992.0101],  METOUT=[2],  NSTORM=[0],  NRUN=[92]
*%-----------------|---------------------------------------------------------------------------------------------------|
START               TZERO=[1993.0101],  METOUT=[2],  NSTORM=[0],  NRUN=[93]
*%-----------------|---------------------------------------------------------------------------------------------------|
START               TZERO=[1994.0101],  METOUT=[2],  NSTORM=[0],  NRUN=[94]
*%-----------------|---------------------------------------------------------------------------------------------------|
START               TZERO=[1995.0101],  METOUT=[2],  NSTORM=[0],  NRUN=[95]
*%-----------------|---------------------------------------------------------------------------------------------------|
START               TZERO=[1996.0101],  METOUT=[2],  NSTORM=[0],  NRUN=[96]
*%-----------------|---------------------------------------------------------------------------------------------------|
START               TZERO=[1997.0101],  METOUT=[2],  NSTORM=[0],  NRUN=[97]
*%-----------------|---------------------------------------------------------------------------------------------------|
START               TZERO=[1998.0101],  METOUT=[2],  NSTORM=[0],  NRUN=[98]
*%-----------------|---------------------------------------------------------------------------------------------------|
START               TZERO=[1999.0101],  METOUT=[2],  NSTORM=[0],  NRUN=[99]
*%-----------------|---------------------------------------------------------------------------------------------------|
START               TZERO=[2000.0101],  METOUT=[2],  NSTORM=[0],  NRUN=[100]
*%-----------------|---------------------------------------------------------------------
```

```
------------------------------|
*% MISSING FROM AES RAINFALL DATA
*%START                 TZERO=[2001.0101],  METOUT=[2],  NSTORM=[0],  NRUN=[101]
*%-----------------|---------------------------------------------------------------------------------------------------|
START                 TZERO=[2002.0101],  METOUT=[2],  NSTORM=[0],  NRUN=[102]
*%-----------------|---------------------------------------------------------------------------------------------------|
START                 TZERO=[2003.0101],  METOUT=[2],  NSTORM=[0],  NRUN=[103]
*%-----------------|---------------------------------------------------------------------------------------------------|
FINISH
```

```
 ==========================================================================================

 SSSSS   W   W   M   M   H   H   Y   Y   M   M    OOO        222     000    11   5555   =========
 S       W W W   MM MM   H   H    Y Y    MM MM   O   O         2    0   0   11   5
 SSSSS   W W W   M M M   HHHHH     Y     M M M   O   O         2    0   0   11   5      Ver 5.500
     S    W W    M   M   H   H     Y     M   M   O   O       222    0   0   11   555    FEB  2015
 SSSSS    W W    M   M   H   H     Y     M   M    OOO        2      0   0   11      5   =========
                                                             2      0   0   11      5   # 2549237
       StormWater Management HYdrologic Model                 222     000    11   555    =========

 ******************************************************************************************
 ***************************************  SWMHYMO Ver 5.500  ******************************
 ******************  A single event and continuous hydrologic simulation model  ******************
 ******************     based on the principles of HYMO and its successors      ******************
 ******************                 OTTHYMO-83 and OTTHYMO-89.                  ******************
 ******************************************************************************************
 ****************** Distributed by:  J.F. Sabourin and Associates Inc.         ******************
 ******************                  Ottawa,  Ontario: (613) 836-3884          ******************
 ******************                  Gatineau, Quebec: (819) 243-6858          ******************
 ******************                  E-Mail: swmhymo@jfsa.Com                  ******************
 ******************************************************************************************

 ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
 ++++++++++++++++++ Licensed user: JFSAinc.                                  ++++++++++++++++++
 ++++++++++++++++++               Ottawa               SERIAL#:2549237       ++++++++++++++++++
 ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

 ******************************************************************************************
 ******************           ++++++ PROGRAM ARRAY DIMENSIONS ++++++          ******************
 ******************           Maximum value for ID numbers  :     11          ******************
 ******************           Max. number of rainfall points: 105408          ******************
 ******************           Max. number of flow points    : 105408          ******************
 ******************************************************************************************


 *******************************   S U M M A R Y   O U T P U T   *******************************
 ******************************************************************************************
 *                 RUN DATE: 2021-10-19     TIME: 10:03:58     RUN COUNTER: 006020           *
 ******************************************************************************************
 * Input   file: C:\Temp\20210930-Water Budget\20210930-Post Dev\BCD_PH3-POST_v01.dat        *
 * Output  file: C:\Temp\20210930-Water Budget\20210930-Post Dev\BCD_PH3-POST_v01.out        *
 * Summary file: C:\Temp\20210930-Water Budget\20210930-Post Dev\BCD_PH3-POST_v01.sum        *
 * User comments:                                                                           *
 * 1:_______________________________________________________________________________________*
 * 2:_______________________________________________________________________________________*
 * 3:_______________________________________________________________________________________*
 ******************************************************************************************


#************************************************************************************************************
#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
#************************************************************************************************************
#  Project Name: Barrhaven Conservancy Development
#  Project Number: 1474
#  Date         : 2021/Oct/18
#  Modeller     : J.Burnett, P.Eng.
#  Company      : J.F. Sabourin and Associates
#  License #    : 2582634
#************************************************************************************************************
  ** END OF RUN :   66

*******************************************************************************************






 RUN#:COMMAND#
R0067:C00001-------------------------------------------------------------------------------------
     START
       [TZERO =    .00 hrs on 19670101]
       [METOUT=   2    (1=imperial, 2=metric output)]
       [NSTORM=   0 ]
       [NRUN  = 0067 ]
#************************************************************************************************************
#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
#************************************************************************************************************
#  Project Name: Barrhaven Conservancy Development
#  Project Number: 1474
#  Date         : 2021/Oct/18
#  Modeller     : J.Burnett, P.Eng.
#  Company      : J.F. Sabourin and Associates
#  License #    : 2582634
#************************************************************************************************************
# Ottawa International Airport (1967 - 2003)
R0067:C00002-------------------------------------------------------------------------------------
   *  READ AES DATA
       [Filename  = YOW_1967_2007.123                                              ]
       [Start_date= 1967.0101: End_date= 1967.1231]
       {DT= 60.min: Length= 3984.hrs: WetHrs=  257: DryHrs= 3727: PTOT= 386.90}
       Maximum average rainfall intensities over
         1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
        24.60    17.65    13.20     7.25     3.83     2.36     1.73     1.32      .90    mm/hr
        24.60    35.30    39.60    43.50    46.00    56.60    62.30    63.20    64.90    mm
       19670921 19670921 19670921 19670921 19670921 19670922 19670922 19670923 19670924  date
       Number of rainfall events per following interevent time
         1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
          80       65       56       40       32       29       24       20       18
       Number of events with at least the following durations
         1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
          79       42       29       14        3        0        0        0        0
R0067:C00003-------------------------------------------------------------------------------------
     COMPUTE API
       [APIini= 50.00: APIkdy= .9000: APIkdt= .9956]
       {APImax= 76.77: APIavg= 24.81: APImin=  3.06}
#************************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITH INFILTRATION)  - POST DEVELOPMENT CONDITIONS
#************************************************************************************************************
R0067:C00004------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W1             8.92     .350 1967.0921_17:00  165.87 .429     .000
       [XIMP=.54:TIMP=.64]
       [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
       [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 244.:MNI=.013:SCI=   .0]
       [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W1
# Assumed trench 1.25m wide 0.4 deep, 1991m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 344 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0067:C00005------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W1             8.92     .350 1967.0921_17:00  165.87  n/a     .000
                out <=    5.0 01:W1-LID         4.25     .002 1967.0725_ 0:45  165.86  n/a     .000
           overflow <=    5.0 03:W1-LID-Out     4.67     .343 1967.0921_17:00  165.87  n/a     .000
      {MxStoUsed=.3439E-01  m3, TotOvfVol=.7753E+00  m3, N-Ovf=   50, TotDurOvf=   74.hrs}
R0067:C00006------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W2             8.22     .329 1967.0921_17:00  165.87 .429     .000
       [XIMP=.54:TIMP=.64]
       [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
       [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 234.:MNI=.013:SCI=   .0]
       [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W2
# Assumed trench 1.25m wide 0.4 deep, 1896m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 330 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0067:C00007------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W2             8.22     .329 1967.0921_17:00  165.87  n/a     .000
                out <=    5.0 01:W2-LID         4.03     .002 1967.0725_ 0:45  165.87  n/a     .000
           overflow <=    5.0 03:W2-LID-Out     4.19     .322 1967.0921_17:00  165.87  n/a     .000
      {MxStoUsed=.3293E-01  m3, TotOvfVol=.6953E+00  m3, N-Ovf=   47, TotDurOvf=   71.hrs}
R0067:C00008------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W3             9.90     .388 1967.0921_17:00  165.87 .429     .000
       [XIMP=.54:TIMP=.64]
       [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
       [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 257.:MNI=.013:SCI=   .0]
       [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W3
# Assumed trench 1.25m wide 0.4 deep, 1693m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 303 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0067:C00009------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W3             9.90     .388 1967.0921_17:00  165.87  n/a     .000
                out <=    5.0 01:W3-LID         3.86     .002 1967.0722_14:30  165.88  n/a     .000
           overflow <=    5.0 03:W3-LID-Out     6.04     .381 1967.0921_17:00  165.87  n/a     .000
      {MxStoUsed=.3028E-01  m3, TotOvfVol=.1001E+01  m3, N-Ovf=   46, TotDurOvf=   94.hrs}
R0067:C00010------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W4             8.60     .338 1967.0921_17:00  165.87 .429     .000
       [XIMP=.54:TIMP=.64]
       [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
       [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 239.:MNI=.013:SCI=   .0]
       [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W4
# Assumed trench 1.25m wide 0.4 deep, 1693m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 303 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0067:C00011------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W4             8.60     .338 1967.0921_17:00  165.87  n/a     .000
                out <=    5.0 01:W4-LID         3.78     .002 1967.0722_14:30  165.88  n/a     .000
           overflow <=    5.0 03:W4-LID-Out     4.82     .331 1967.0921_17:00  165.87  n/a     .000
      {MxStoUsed=.3029E-01  m3, TotOvfVol=.8001E+00  m3, N-Ovf=   41, TotDurOvf=   80.hrs}
R0067:C00012------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:W1             8.92     .350 1967.0921_17:00  165.87  n/a     .000
                    +     5.0 02:W2             8.22     .329 1967.0921_17:00  165.87  n/a     .000
                    +     5.0 02:W3             9.90     .388 1967.0921_17:00  165.87  n/a     .000
                    +     5.0 02:W4             8.60     .338 1967.0921_17:00  165.87  n/a     .000
                 SUM=     5.0 01:BCD-PH3       35.64    1.405 1967.0921_17:00  165.87  n/a     .000
R0067:C00013------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:W1-LID-Out     4.67     .343 1967.0921_17:00  165.87  n/a     .000
                    +     5.0 02:W2-LID-Out     4.19     .322 1967.0921_17:00  165.87  n/a     .000
                    +     5.0 02:W3-LID-Out     6.04     .381 1967.0921_17:00  165.87  n/a     .000
                    +     5.0 02:W4-LID-Out     4.82     .331 1967.0921_17:00  165.87  n/a     .000
                 SUM=     5.0 01:BCD-PH3-LI    19.73    1.377 1967.0921_17:00  165.87  n/a     .000
#************************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITHOUT INFILTRATION)  - POST DEVELOPMENT CONDITIONS
#************************************************************************************************************
#                  Set infiltration to 0 (CN = 99.99) for water balance analysis
#************************************************************************************************************
R0067:C00014------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W1         8.92     .556 1967.0921_17:00  264.01 .682     .000
       [XIMP=.54:TIMP=.64]
       [LOSS= 2 :CN=100.0]
       [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 244.:MNI=.013:SCI=   .0]
       [IaRECimp=   1.50: IaRECper=   6.00]
       [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0067:C00015------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W2         8.22     .513 1967.0921_17:00  264.01 .682     .000
       [XIMP=.54:TIMP=.64]
       [LOSS= 2 :CN=100.0]
       [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 234.:MNI=.013:SCI=   .0]
       [IaRECimp=   1.50: IaRECper=   6.00]
       [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0067:C00016------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W3         9.90     .615 1967.0921_17:00  264.01 .682     .000
       [XIMP=.54:TIMP=.64]
       [LOSS= 2 :CN=100.0]
       [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 257.:MNI=.013:SCI=   .0]
       [IaRECimp=   1.50: IaRECper=   6.00]
       [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0067:C00017------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W4         8.60     .536 1967.0921_17:00  264.01 .682     .000
       [XIMP=.54:TIMP=.64]
       [LOSS= 2 :CN=100.0]
       [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 239.:MNI=.013:SCI=   .0]
       [IaRECimp=   1.50: IaRECper=   6.00]
       [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0067:C00018------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:INF-W1         8.92     .556 1967.0921_17:00  264.01  n/a     .000
                    +     5.0 02:INF-W2         8.22     .513 1967.0921_17:00  264.01  n/a     .000
                    +     5.0 02:INF-W3         9.90     .615 1967.0921_17:00  264.01  n/a     .000
                    +     5.0 02:INF-W4         8.60     .536 1967.0921_17:00  264.01  n/a     .000
                 SUM=     5.0 01:INF-BCD-PH    35.64    2.220 1967.0921_17:00  264.01  n/a     .000
#################################################################################
# CONTINUOUS RAINFALL DATA
#################################################################################
  ** END OF RUN :   67

*******************************************************************************************





 RUN#:COMMAND#
R0068:C00001-------------------------------------------------------------------------------------
     START
       [TZERO =    .00 hrs on 19680101]
       [METOUT=   2    (1=imperial, 2=metric output)]
       [NSTORM=   0 ]
       [NRUN  = 0068 ]
#************************************************************************************************************
#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
#************************************************************************************************************
#  Project Name: Barrhaven Conservancy Development
#  Project Number: 1474
#  Date         : 2021/Oct/18
#  Modeller     : J.Burnett, P.Eng.
#  Company      : J.F. Sabourin and Associates
#  License #    : 2582634
#************************************************************************************************************
# Ottawa International Airport (1967 - 2003)
R0068:C00002-------------------------------------------------------------------------------------
   *  READ AES DATA
       [Filename  = YOW_1967_2007.123                                              ]
       [Start_date= 1968.0101: End_date= 1968.1230]
       {DT= 60.min: Length= 8760.hrs: WetHrs=  413: DryHrs= 8347: PTOT= 592.80}
       Maximum average rainfall intensities over
         1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
        33.30    17.05    11.37     6.23     3.74     1.87     1.26      .95      .70    mm/hr
        33.30    34.10    34.10    37.40    44.90    44.90    45.40    45.40    50.20    mm
       19680817 19680817 19680817 19680808 19680817 19680818 19680817 19680808 19680820  date
       Number of rainfall events per following interevent time
         1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
          137      105       93       84       72       63       48       43       36
       Number of events with at least the following durations
         1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
          136       76       49       18        5        0        0        0        0
R0068:C00003-------------------------------------------------------------------------------------
     COMPUTE API
       [APIini= 50.00: APIkdy= .9000: APIkdt= .9956]
       {APImax= 67.52: APIavg= 16.74: APImin=   .27}
#************************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITH INFILTRATION)  - POST DEVELOPMENT CONDITIONS
#************************************************************************************************************
R0068:C00004------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W1             8.92     .584 1968.0817_ 5:00  247.51 .418     .000
       [XIMP=.54:TIMP=.64]
       [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
       [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 244.:MNI=.013:SCI=   .0]
       [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W1
# Assumed trench 1.25m wide 0.4 deep, 1991m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 344 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0068:C00005------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W1             8.92     .584 1968.0817_ 5:00  247.51  n/a     .000
                out <=    5.0 01:W1-LID         4.89     .002 1968.0316_20:45  247.51  n/a     .000
           overflow <=    5.0 03:W1-LID-Out     4.03     .570 1968.0817_ 5:00  247.51  n/a     .000
      {MxStoUsed=.3435E-01  m3, TotOvfVol=.9977E+00  m3, N-Ovf=   53, TotDurOvf=   88.hrs}
R0068:C00006------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W2             8.22     .539 1968.0817_ 5:00  247.51 .418     .000
       [XIMP=.54:TIMP=.64]
       [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
       [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 234.:MNI=.013:SCI=   .0]
       [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W2
# Assumed trench 1.25m wide 0.4 deep, 1896m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 330 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0068:C00007------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W2             8.22     .539 1968.0817_ 5:00  247.51  n/a     .000
                out <=    5.0 01:W2-LID         4.60     .002 1968.0316_21:40  247.51  n/a     .000
           overflow <=    5.0 03:W2-LID-Out     3.62     .526 1968.0817_ 5:00  247.51  n/a     .000
      {MxStoUsed=.3289E-01  m3, TotOvfVol=.8956E+00  m3, N-Ovf=   51, TotDurOvf=   82.hrs}
R0068:C00008------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W3             9.90     .647 1968.0817_ 5:00  247.51 .418     .000
       [XIMP=.54:TIMP=.64]
       [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
       [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 257.:MNI=.013:SCI=   .0]
       [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W3
# Assumed trench 1.25m wide 0.4 deep, 1693m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 303 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0068:C00009------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W3             9.90     .647 1968.0817_ 5:00  247.51  n/a     .000
                out <=    5.0 01:W3-LID         4.65     .002 1968.0119_10:50  247.57  n/a     .000
           overflow <=    5.0 03:W3-LID-Out     5.25     .632 1968.0817_ 5:00  247.51  n/a     .000
      {MxStoUsed=.3024E-01  m3, TotOvfVol=.1300E+01  m3, N-Ovf=   61, TotDurOvf=  112.hrs}
R0068:C00010------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W4             8.60     .563 1968.0817_ 5:00  247.51 .418     .000
       [XIMP=.54:TIMP=.64]
       [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
       [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 239.:MNI=.013:SCI=   .0]
       [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W4
# Assumed trench 1.25m wide 0.4 deep, 1693m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 303 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0068:C00011------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W4             8.60     .563 1968.0817_ 5:00  247.51  n/a     .000
                out <=    5.0 01:W4-LID         4.44     .002 1968.0119_10:55  247.57  n/a     .000
           overflow <=    5.0 03:W4-LID-Out     4.16     .550 1968.0817_ 5:00  247.51  n/a     .000
      {MxStoUsed=.3030E-01  m3, TotOvfVol=.1030E+01  m3, N-Ovf=   64, TotDurOvf=   98.hrs}
R0068:C00012------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:W1             8.92     .584 1968.0817_ 5:00  247.51  n/a     .000
                    +     5.0 02:W2             8.22     .539 1968.0817_ 5:00  247.51  n/a     .000
                    +     5.0 02:W3             9.90     .647 1968.0817_ 5:00  247.51  n/a     .000
                    +     5.0 02:W4             8.60     .563 1968.0817_ 5:00  247.51  n/a     .000
                 SUM=     5.0 01:BCD-PH3       35.64    2.333 1968.0817_ 5:00  247.51  n/a     .000
R0068:C00013------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:W1-LID-Out     4.03     .570 1968.0817_ 5:00  247.51  n/a     .000
                    +     5.0 02:W2-LID-Out     3.62     .526 1968.0817_ 5:00  247.51  n/a     .000
                    +     5.0 02:W3-LID-Out     5.25     .632 1968.0817_ 5:00  247.51  n/a     .000
                    +     5.0 02:W4-LID-Out     4.16     .550 1968.0817_ 5:00  247.51  n/a     .000
                 SUM=     5.0 01:BCD-PH3-LI    17.06    2.278 1968.0817_ 5:00  247.51  n/a     .000
#************************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITHOUT INFILTRATION)  - POST DEVELOPMENT CONDITIONS
#************************************************************************************************************
#                  Set infiltration to 0 (CN = 99.99) for water balance analysis
#************************************************************************************************************
```

```
R0068:C00014------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W1         8.92     .783 1968.0817_ 5:00  378.65 .639     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 244.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0068:C00015------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W2         8.22     .722 1968.0817_ 5:00  378.65 .639     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 234.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0068:C00016------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W3         9.90     .867 1968.0817_ 5:00  378.65 .639     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 257.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0068:C00017------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W4         8.60     .755 1968.0817_ 5:00  378.65 .639     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 239.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0068:C00018------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:INF-W1         8.92     .783 1968.0817_ 5:00  378.65  n/a     .000
                    +     5.0 02:INF-W2         8.22     .722 1968.0817_ 5:00  378.65  n/a     .000
                    +     5.0 02:INF-W3         9.90     .867 1968.0817_ 5:00  378.65  n/a     .000
                    +     5.0 02:INF-W4         8.60     .755 1968.0817_ 5:00  378.65  n/a     .000
                 SUM=     5.0 01:INF-BCD-PH    35.64    3.127 1968.0817_ 5:00  378.65  n/a     .000
################################################################################
# CONTINUOUS RAINFALL DATA
################################################################################
  ** END OF RUN :   68

****************************************************************************************************


 RUN#:COMMAND#
R0069:C00001----------------------------------------------------------------------------------------
     START
      [TZERO =    .00 hrs on 19690101]
      [METOUT=   2    (1=imperial, 2=metric output)]
      [NSTORM=   0 ]
      [NRUN  = 0069 ]
#**************************************************************************************************************************
#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
#**************************************************************************************************************************
#  Project Name: Barrhaven Conservancy Development
#  Project Number: 1474
#  Date        : 2021/Oct/18
#  Modeller    : J.Burnett, P.Eng.
#  Company     : J.F. Sabourin and Associates
#  License #   : 2582634
#**************************************************************************************************************************
# Ottawa International Airport (1967 - 2003)
R0069:C00002----------------------------------------------------------------------------------------
  *  READ AES DATA
      [Filename  = YOW_1967_2007.123                                                   ]
      [Start_date= 1969.0101: End_date= 1969.1231]
      {DT= 60.min: Length= 8760.hrs: WetHrs=  470: DryHrs= 8290: PTOT= 570.30}
      Maximum average rainfall intensities over
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
       21.10    16.25    10.83     7.78     3.93     2.10     1.40     1.09      .75    mm/hr
       21.10    32.50    32.50    46.70    47.20    50.30    50.30    52.10    54.00    mm
      19690818 19690818 19690818 19690819 19690819 19690819 19690819 19690819 19690819  date
      Number of rainfall events per following interevent time
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         157      119      107       92       72       58       49       43       32
      Number of events with at least the following durations
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         156       84       58       21        5        0        0        0        0
R0069:C00003----------------------------------------------------------------------------------------
     COMPUTE API
      [APIini= 50.00: APIkdy= .9000: APIkdt= .9956]
      {APImax= 56.77: APIavg= 16.06: APImin=   .06}
#**************************************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITH INFILTRATION)  - POST DEVELOPMENT CONDITIONS
#**************************************************************************************************************************
R0069:C00004------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W1             8.92     .342 1969.0818_22:00  226.65 .397     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 244.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W1
# Assumed trench 1.25m wide 0.4 deep, 1991m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 344 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0069:C00005------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W1             8.92     .342 1969.0818_22:00  226.65  n/a     .000
                out <=    5.0 01:W1-LID         4.92     .002 1969.0124_12:55  226.65  n/a     .000
           overflow <=    5.0 03:W1-LID-Out     4.00     .335 1969.0818_22:00  226.65  n/a     .000
     {MxStoUsed=.3440E-01  m3, TotOvfVol=.9066E+00  m3, N-Ovf=   55, TotDurOvf=  106.hrs}
R0069:C00006------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W2             8.22     .315 1969.0818_22:00  226.65 .397     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 234.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W2
# Assumed trench 1.25m wide 0.4 deep, 1896m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 330 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0069:C00007------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W2             8.22     .315 1969.0818_22:00  226.65  n/a     .000
                out <=    5.0 01:W2-LID         4.64     .002 1969.0124_13:00  226.65  n/a     .000
           overflow <=    5.0 03:W2-LID-Out     3.58     .309 1969.0818_22:00  226.65  n/a     .000
     {MxStoUsed=.3300E-01  m3, TotOvfVol=.8111E+00  m3, N-Ovf=   50, TotDurOvf=  104.hrs}
R0069:C00008------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W3             9.90     .379 1969.0818_22:00  226.65 .397     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 257.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W3
# Assumed trench 1.25m wide 0.4 deep, 1693m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 303 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0069:C00009------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W3             9.90     .379 1969.0818_22:00  226.65  n/a     .000
                out <=    5.0 01:W3-LID         4.60     .002 1969.0124_ 8:50  226.70  n/a     .000
           overflow <=    5.0 03:W3-LID-Out     5.30     .372 1969.0818_22:00  226.65  n/a     .000
     {MxStoUsed=.3029E-01  m3, TotOvfVol=.1200E+01  m3, N-Ovf=   67, TotDurOvf=  127.hrs}
R0069:C00010------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W4             8.60     .330 1969.0818_22:00  226.65 .397     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 239.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W4
# Assumed trench 1.25m wide 0.4 deep, 1693m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 303 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0069:C00011------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W4             8.60     .330 1969.0818_22:00  226.65  n/a     .000
                out <=    5.0 01:W4-LID         4.44     .002 1969.0124_ 8:55  226.70  n/a     .000
           overflow <=    5.0 03:W4-LID-Out     4.16     .323 1969.0818_22:00  226.65  n/a     .000
     {MxStoUsed=.3029E-01  m3, TotOvfVol=.9424E+00  m3, N-Ovf=   59, TotDurOvf=  114.hrs}
R0069:C00012------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:W1             8.92     .342 1969.0818_22:00  226.65  n/a     .000
                    +     5.0 02:W2             8.22     .315 1969.0818_22:00  226.65  n/a     .000
                    +     5.0 02:W3             9.90     .379 1969.0818_22:00  226.65  n/a     .000
                    +     5.0 02:W4             8.60     .330 1969.0818_22:00  226.65  n/a     .000
                 SUM=     5.0 01:BCD-PH3       35.64    1.365 1969.0818_22:00  226.65  n/a     .000
R0069:C00013------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:W1-LID-Out     4.00     .335 1969.0818_22:00  226.65  n/a     .000
                    +     5.0 02:W2-LID-Out     3.58     .309 1969.0818_22:00  226.65  n/a     .000
                    +     5.0 02:W3-LID-Out     5.30     .372 1969.0818_22:00  226.65  n/a     .000
                    +     5.0 02:W4-LID-Out     4.16     .323 1969.0818_22:00  226.65  n/a     .000
                 SUM=     5.0 01:BCD-PH3-LI    17.03    1.338 1969.0818_22:00  226.65  n/a     .000
#**************************************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITHOUT INFILTRATION)  - POST DEVELOPMENT CONDITIONS
#**************************************************************************************************************************
#                  Set infiltration to 0 (CN = 99.99) for water balance analysis
#**************************************************************************************************************************
R0069:C00014------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W1         8.92     .507 1969.0818_22:00  349.05 .612     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 244.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0069:C00015------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W2         8.22     .468 1969.0818_22:00  349.05 .612     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 234.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0069:C00016------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W3         9.90     .562 1969.0818_22:00  349.05 .612     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 257.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0069:C00017------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W4         8.60     .489 1969.0818_22:00  349.05 .612     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 239.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0069:C00018------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:INF-W1         8.92     .507 1969.0818_22:00  349.05  n/a     .000
                    +     5.0 02:INF-W2         8.22     .468 1969.0818_22:00  349.05  n/a     .000
                    +     5.0 02:INF-W3         9.90     .562 1969.0818_22:00  349.05  n/a     .000
                    +     5.0 02:INF-W4         8.60     .489 1969.0818_22:00  349.06  n/a     .000
                 SUM=     5.0 01:INF-BCD-PH    35.64    2.026 1969.0818_22:00  349.05  n/a     .000
################################################################################
# CONTINUOUS RAINFALL DATA
################################################################################
  ** END OF RUN :   69

****************************************************************************************************


 RUN#:COMMAND#
R0070:C00001----------------------------------------------------------------------------------------
     START
      [TZERO =    .00 hrs on 19700101]
      [METOUT=   2    (1=imperial, 2=metric output)]
      [NSTORM=   0 ]
      [NRUN  = 0070 ]
#**************************************************************************************************************************
#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
#**************************************************************************************************************************
#  Project Name: Barrhaven Conservancy Development
#  Project Number: 1474
#  Date        : 2021/Oct/18
#  Modeller    : J.Burnett, P.Eng.
#  Company     : J.F. Sabourin and Associates
#  License #   : 2582634
#**************************************************************************************************************************
# Ottawa International Airport (1967 - 2003)
R0070:C00002----------------------------------------------------------------------------------------
  *  READ AES DATA
      [Filename  = YOW_1967_2007.123                                                   ]
      [Start_date= 1970.0101: End_date= 1970.1231]
      {DT= 60.min: Length= 8760.hrs: WetHrs=  373: DryHrs= 8387: PTOT= 558.90}
      Maximum average rainfall intensities over
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
       35.30    18.30    12.20     6.10     3.63     1.81     1.21     1.46      .99    mm/hr
       35.30    36.60    36.60    36.60    43.50    43.50    43.50    69.90    71.20    mm
      19700926 19700926 19700926 19700927 19700817 19700817 19700818 19700926 19700927  date
      Number of rainfall events per following interevent time
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         148      127      109       84       72       60       54       41       30
      Number of events with at least the following durations
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         147       79       40       15        3        0        0        0        0
R0070:C00003----------------------------------------------------------------------------------------
     COMPUTE API
      [APIini= 50.00: APIkdy= .9000: APIkdt= .9956]
      {APImax= 76.00: APIavg= 15.84: APImin=   .07}
#**************************************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITH INFILTRATION)  - POST DEVELOPMENT CONDITIONS
#**************************************************************************************************************************
R0070:C00004------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W1             8.92     .630 1970.0926_21:00  230.67 .413     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 244.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W1
# Assumed trench 1.25m wide 0.4 deep, 1991m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 344 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0070:C00005------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W1             8.92     .630 1970.0926_21:00  230.67  n/a     .000
                out <=    5.0 01:W1-LID         4.85     .002 1970.0202_13:50  230.67  n/a     .000
           overflow <=    5.0 03:W1-LID-Out     4.07     .615 1970.0926_21:00  230.67  n/a     .000
     {MxStoUsed=.3438E-01  m3, TotOvfVol=.9398E+00  m3, N-Ovf=   60, TotDurOvf=   76.hrs}
R0070:C00006------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W2             8.22     .581 1970.0926_21:00  230.67 .413     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 234.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W2
# Assumed trench 1.25m wide 0.4 deep, 1896m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 330 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0070:C00007------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W2             8.22     .581 1970.0926_21:00  230.67  n/a     .000
                out <=    5.0 01:W2-LID         4.58     .002 1970.0202_14:00  230.67  n/a     .000
           overflow <=    5.0 03:W2-LID-Out     3.64     .567 1970.0926_21:00  230.67  n/a     .000
     {MxStoUsed=.3299E-01  m3, TotOvfVol=.8404E+00  m3, N-Ovf=   64, TotDurOvf=   74.hrs}
R0070:C00008------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W3             9.90     .698 1970.0926_21:00  230.67 .413     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 257.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W3
# Assumed trench 1.25m wide 0.4 deep, 1693m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 303 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0070:C00009------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W3             9.90     .698 1970.0926_21:00  230.67  n/a     .000
                out <=    5.0 01:W3-LID         4.56     .002 1970.0202_10:25  230.73  n/a     .000
           overflow <=    5.0 03:W3-LID-Out     5.34     .682 1970.0926_21:00  230.67  n/a     .000
     {MxStoUsed=.3030E-01  m3, TotOvfVol=.1233E+01  m3, N-Ovf=   68, TotDurOvf=   94.hrs}
R0070:C00010------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W4             8.60     .608 1970.0926_21:00  230.67 .413     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 239.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W4
# Assumed trench 1.25m wide 0.4 deep, 1693m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 303 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0070:C00011------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W4             8.60     .608 1970.0926_21:00  230.67  n/a     .000
                out <=    5.0 01:W4-LID         4.38     .002 1970.0202_10:25  230.72  n/a     .000
           overflow <=    5.0 03:W4-LID-Out     4.22     .593 1970.0926_21:00  230.67  n/a     .000
     {MxStoUsed=.3029E-01  m3, TotOvfVol=.9723E+00  m3, N-Ovf=   57, TotDurOvf=   83.hrs}
R0070:C00012------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:W1             8.92     .630 1970.0926_21:00  230.67  n/a     .000
                    +     5.0 02:W2             8.22     .581 1970.0926_21:00  230.67  n/a     .000
                    +     5.0 02:W3             9.90     .698 1970.0926_21:00  230.67  n/a     .000
                    +     5.0 02:W4             8.60     .608 1970.0926_21:00  230.67  n/a     .000
                 SUM=     5.0 01:BCD-PH3       35.64    2.516 1970.0926_21:00  230.67  n/a     .000
R0070:C00013------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:W1-LID-Out     4.07     .615 1970.0926_21:00  230.67  n/a     .000
                    +     5.0 02:W2-LID-Out     3.64     .567 1970.0926_21:00  230.67  n/a     .000
                    +     5.0 02:W3-LID-Out     5.34     .682 1970.0926_21:00  230.67  n/a     .000
                    +     5.0 02:W4-LID-Out     4.22     .593 1970.0926_21:00  230.67  n/a     .000
                 SUM=     5.0 01:BCD-PH3-LI    17.28    2.457 1970.0926_21:00  230.67  n/a     .000
#**************************************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITHOUT INFILTRATION)  - POST DEVELOPMENT CONDITIONS
#**************************************************************************************************************************
#                  Set infiltration to 0 (CN = 99.99) for water balance analysis
#**************************************************************************************************************************
R0070:C00014------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W1         8.92     .833 1970.0926_21:00  341.01 .610     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 244.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0070:C00015------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W2         8.22     .779 1970.0926_21:00  341.01 .610     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 234.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0070:C00016------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W3         9.90     .922 1970.0926_21:00  341.01 .610     .000
```

```
       [XIMP=.54:TIMP=.64]
       [LOSS= 2 :CN=100.0]
       [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 257.:MNI=.013:SCI=   .0]
       [IaRECimp=   1.50: IaRECper=   6.00]
       [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0070:C00017------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W4         8.60     .814 1970.0926_21:00  341.01 .610     .000
       [XIMP=.54:TIMP=.64]
       [LOSS= 2 :CN=100.0]
       [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 239.:MNI=.013:SCI=   .0]
       [IaRECimp=   1.50: IaRECper=   6.00]
       [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0070:C00018------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:INF-W1         8.92     .833 1970.0926_21:00  341.01  n/a     .000
                   +      5.0 02:INF-W2         8.22     .779 1970.0926_21:00  341.01  n/a     .000
                   +      5.0 02:INF-W3         9.90     .922 1970.0926_21:00  341.01  n/a     .000
                   +      5.0 02:INF-W4         8.60     .814 1970.0926_21:00  341.01  n/a     .000
                 SUM=     5.0 01:INF-BCD-PH    35.64    3.348 1970.0926_21:00  341.01  n/a     .000
##################################################################################
# CONTINUOUS RAINFALL DATA
##################################################################################
  ** END OF RUN :   70

*****************************************************************************************************





 RUN#:COMMAND#
R0071:C00001---------------------------------------------------------------------------------------
     START
       [TZERO =    .00 hrs on 19710101]
       [METOUT=   2    (1=imperial, 2=metric output)]
       [NSTORM=   0 ]
       [NRUN  = 0071 ]
#**********************************************************************************************************************
#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
#**********************************************************************************************************************
#  Project Name: Barrhaven Conservancy Development
#  Project Number: 1474
#  Date         : 2021/Oct/18
#  Modeller     : J.Burnett, P.Eng.
#  Company      : J.F. Sabourin and Associates
#  License #    : 2582634
#**********************************************************************************************************************
# Ottawa International Airport (1967 - 2003)
R0071:C00002---------------------------------------------------------------------------------------
  *  READ AES DATA
       [Filename  = YOW_1967_2007.123                                             ]
       [Start_date= 1971.0101: End_date= 1971.1231]
       {DT= 60.min: Length= 8760.hrs: WetHrs=  412: DryHrs= 8348: PTOT= 522.10}
       Maximum average rainfall intensities over
         1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
        24.60    16.60    11.67     6.13     3.09     1.56     1.06      .79      .54    mm/hr
        24.60    33.20    35.00    36.80    37.10    37.40    38.00    38.00    38.90    mm
       19710810 19710810 19710810 19710810 19710810 19710810 19710811 19710812 19710830  date
       Number of rainfall events per following interevent time
         1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
          156      123      113       93       72       61       52       42       33
       Number of events with at least the following durations
         1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
          155       81       59       21        2        0        0        0        0
R0071:C00003---------------------------------------------------------------------------------------
     COMPUTE API
       [APIini= 50.00: APIkdy= .9000: APIkdt= .9956]
       {APImax= 62.22: APIavg= 14.84: APImin=   .36}
#**********************************************************************************************************************
#                   Barrhaven Conservancy Development Phase 3 (WITH INFILTRATION)  - POST DEVELOPMENT CONDITIONS
#**********************************************************************************************************************
R0071:C00004------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W1             8.92     .374 1971.0810_15:00  201.40 .386     .000
       [XIMP=.54:TIMP=.64]
       [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
       [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 244.:MNI=.013:SCI=   .0]
       [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W1
# Assumed trench 1.25m wide 0.4 deep, 1991m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 344 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0071:C00005------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W1             8.92     .374 1971.0810_15:00  201.40  n/a     .000
                out <=    5.0 01:W1-LID         5.51     .002 1971.0504_10:45  201.40  n/a     .000
           overflow <=    5.0 03:W1-LID-Out     3.41     .364 1971.0810_15:00  201.40  n/a     .000
      {MxStoUsed=.3434E-01  m3, TotOvfVol=.6868E+00  m3, N-Ovf=   51, TotDurOvf=   51.hrs}
R0071:C00006------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W2             8.22     .345 1971.0810_15:00  201.40 .386     .000
       [XIMP=.54:TIMP=.64]
       [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
       [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 234.:MNI=.013:SCI=   .0]
       [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W2
# Assumed trench 1.25m wide 0.4 deep, 1896m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 330 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0071:C00007------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W2             8.22     .345 1971.0810_15:00  201.40  n/a     .000
                out <=    5.0 01:W2-LID         5.20     .002 1971.0504_11:05  201.40  n/a     .000
           overflow <=    5.0 03:W2-LID-Out     3.02     .336 1971.0810_15:00  201.40  n/a     .000
      {MxStoUsed=.3301E-01  m3, TotOvfVol=.6075E+00  m3, N-Ovf=   46, TotDurOvf=   47.hrs}
R0071:C00008------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W3             9.90     .414 1971.0810_15:00  201.40 .386     .000
       [XIMP=.54:TIMP=.64]
       [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
       [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 257.:MNI=.013:SCI=   .0]
       [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W3
# Assumed trench 1.25m wide 0.4 deep, 1693m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 303 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0071:C00009------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W3             9.90     .414 1971.0810_15:00  201.40  n/a     .000
                out <=    5.0 01:W3-LID         5.19     .002 1971.0212_18:45  201.45  n/a     .000
           overflow <=    5.0 03:W3-LID-Out     4.71     .404 1971.0810_15:00  201.40  n/a     .000
      {MxStoUsed=.3029E-01  m3, TotOvfVol=.9481E+00  m3, N-Ovf=   61, TotDurOvf=   72.hrs}
R0071:C00010------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W4             8.60     .360 1971.0810_15:00  201.40 .386     .000
       [XIMP=.54:TIMP=.64]
       [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
       [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 239.:MNI=.013:SCI=   .0]
       [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W4
# Assumed trench 1.25m wide 0.4 deep, 1693m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 303 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0071:C00011------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W4             8.60     .360 1971.0810_15:00  201.40  n/a     .000
                out <=    5.0 01:W4-LID         4.97     .002 1971.0212_18:50  201.45  n/a     .000
           overflow <=    5.0 03:W4-LID-Out     3.63     .352 1971.0810_15:00  201.40  n/a     .000
      {MxStoUsed=.3029E-01  m3, TotOvfVol=.7310E+00  m3, N-Ovf=   53, TotDurOvf=   60.hrs}
R0071:C00012------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:W1             8.92     .374 1971.0810_15:00  201.40  n/a     .000
                   +      5.0 02:W2             8.22     .345 1971.0810_15:00  201.40  n/a     .000
                   +      5.0 02:W3             9.90     .414 1971.0810_15:00  201.40  n/a     .000
                   +      5.0 02:W4             8.60     .360 1971.0810_15:00  201.40  n/a     .000
                 SUM=     5.0 01:BCD-PH3       35.64    1.493 1971.0810_15:00  201.40  n/a     .000
R0071:C00013------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:W1-LID-Out     3.41     .364 1971.0810_15:00  201.40  n/a     .000
                   +      5.0 02:W2-LID-Out     3.02     .336 1971.0810_15:00  201.40  n/a     .000
                   +      5.0 02:W3-LID-Out     4.71     .404 1971.0810_15:00  201.40  n/a     .000
                   +      5.0 02:W4-LID-Out     3.63     .352 1971.0810_15:00  201.40  n/a     .000
                 SUM=     5.0 01:BCD-PH3-LI    14.76    1.456 1971.0810_15:00  201.40  n/a     .000
#**********************************************************************************************************************
#                   Barrhaven Conservancy Development Phase 3 (WITHOUT INFILTRATION)  - POST DEVELOPMENT CONDITIONS
#**********************************************************************************************************************
#                   Set infiltration to 0 (CN = 99.99) for water balance analysis
#**********************************************************************************************************************
R0071:C00014------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W1         8.92     .571 1971.0810_15:00  300.01 .575     .000
       [XIMP=.54:TIMP=.64]
       [LOSS= 2 :CN=100.0]
       [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 244.:MNI=.013:SCI=   .0]
       [IaRECimp=   1.50: IaRECper=   6.00]
       [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0071:C00015------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W2         8.22     .527 1971.0810_15:00  300.01 .575     .000
       [XIMP=.54:TIMP=.64]
       [LOSS= 2 :CN=100.0]
       [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 234.:MNI=.013:SCI=   .0]
       [IaRECimp=   1.50: IaRECper=   6.00]
       [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0071:C00016------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W3         9.90     .632 1971.0810_15:00  300.01 .575     .000
       [XIMP=.54:TIMP=.64]
       [LOSS= 2 :CN=100.0]
       [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 257.:MNI=.013:SCI=   .0]
       [IaRECimp=   1.50: IaRECper=   6.00]
       [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0071:C00017------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W4         8.60     .551 1971.0810_15:00  300.01 .575     .000
       [XIMP=.54:TIMP=.64]
       [LOSS= 2 :CN=100.0]
       [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 239.:MNI=.013:SCI=   .0]
       [IaRECimp=   1.50: IaRECper=   6.00]
       [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0071:C00018------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:INF-W1         8.92     .571 1971.0810_15:00  300.01  n/a     .000
                   +      5.0 02:INF-W2         8.22     .527 1971.0810_15:00  300.01  n/a     .000
                   +      5.0 02:INF-W3         9.90     .632 1971.0810_15:00  300.01  n/a     .000
                   +      5.0 02:INF-W4         8.60     .551 1971.0810_15:00  300.01  n/a     .000
                 SUM=     5.0 01:INF-BCD-PH    35.64    2.280 1971.0810_15:00  300.01  n/a     .000
##################################################################################
# CONTINUOUS RAINFALL DATA
##################################################################################
  ** END OF RUN :   71

*****************************************************************************************************





 RUN#:COMMAND#
R0072:C00001---------------------------------------------------------------------------------------
     START
       [TZERO =    .00 hrs on 19720101]
       [METOUT=   2    (1=imperial, 2=metric output)]
       [NSTORM=   0 ]
       [NRUN  = 0072 ]
#**********************************************************************************************************************
#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
#**********************************************************************************************************************
#  Project Name: Barrhaven Conservancy Development
#  Project Number: 1474
#  Date         : 2021/Oct/18
#  Modeller     : J.Burnett, P.Eng.
#  Company      : J.F. Sabourin and Associates
#  License #    : 2582634
#**********************************************************************************************************************
# Ottawa International Airport (1967 - 2003)
R0072:C00002---------------------------------------------------------------------------------------
  *  READ AES DATA
       [Filename  = YOW_1967_2007.123                                             ]
       [Start_date= 1972.0101: End_date= 1972.1230]
       {DT= 60.min: Length= 8760.hrs: WetHrs=  489: DryHrs= 8271: PTOT= 784.30}
       Maximum average rainfall intensities over
         1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
        37.30    19.15    12.97     8.15     4.50     2.53     2.00     1.71     1.17    mm/hr
        37.30    38.30    38.90    48.90    54.00    60.70    72.10    82.20    84.20    mm
       19720712 19720712 19720807 19720808 19720808 19720808 19720713 19720714 19720715  date
       Number of rainfall events per following interevent time
         1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
          170      133      122       86       76       60       45       41       31
       Number of events with at least the following durations
         1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
          169       96       58       21        5        0        0        0        0
R0072:C00003---------------------------------------------------------------------------------------
     COMPUTE API
       [APIini= 50.00: APIkdy= .9000: APIkdt= .9956]
       {APImax=108.88: APIavg= 21.70: APImin=   .00}
#**********************************************************************************************************************
#                   Barrhaven Conservancy Development Phase 3 (WITH INFILTRATION)  - POST DEVELOPMENT CONDITIONS
#**********************************************************************************************************************
R0072:C00004------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W1             8.92     .682 1972.0712_ 4:00  345.65 .441     .000
       [XIMP=.54:TIMP=.64]
       [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
       [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 244.:MNI=.013:SCI=   .0]
       [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W1
# Assumed trench 1.25m wide 0.4 deep, 1991m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 344 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0072:C00005------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W1             8.92     .682 1972.0712_ 4:00  345.65  n/a     .000
                out <=    5.0 01:W1-LID         4.03     .002 1972.0413_11:15  345.66  n/a     .000
           overflow <=    5.0 03:W1-LID-Out     4.89     .667 1972.0712_ 4:00  345.65  n/a     .000
      {MxStoUsed=.3440E-01  m3, TotOvfVol=.1690E+01  m3, N-Ovf=   79, TotDurOvf=  118.hrs}
R0072:C00006------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W2             8.22     .630 1972.0712_ 4:00  345.65 .441     .000
       [XIMP=.54:TIMP=.64]
       [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
       [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 234.:MNI=.013:SCI=   .0]
       [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W2
# Assumed trench 1.25m wide 0.4 deep, 1896m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 330 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0072:C00007------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W2             8.22     .630 1972.0712_ 4:00  345.65  n/a     .000
                out <=    5.0 01:W2-LID         3.81     .002 1972.0413_11:20  345.66  n/a     .000
           overflow <=    5.0 03:W2-LID-Out     4.41     .616 1972.0712_ 4:00  345.65  n/a     .000
      {MxStoUsed=.3299E-01  m3, TotOvfVol=.1525E+01  m3, N-Ovf=   82, TotDurOvf=  113.hrs}
R0072:C00008------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W3             9.90     .756 1972.0712_ 4:00  345.65 .441     .000
       [XIMP=.54:TIMP=.64]
       [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
       [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 257.:MNI=.013:SCI=   .0]
       [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W3
# Assumed trench 1.25m wide 0.4 deep, 1693m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 303 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0072:C00009------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W3             9.90     .756 1972.0712_ 4:00  345.65  n/a     .000
                out <=    5.0 01:W3-LID         3.81     .002 1972.0113_17:00  345.75  n/a     .000
           overflow <=    5.0 03:W3-LID-Out     6.09     .740 1972.0712_ 4:00  345.65  n/a     .000
      {MxStoUsed=.3029E-01  m3, TotOvfVol=.2106E+01  m3, N-Ovf=   83, TotDurOvf=  140.hrs}
R0072:C00010------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W4             8.60     .658 1972.0712_ 4:00  345.65 .441     .000
       [XIMP=.54:TIMP=.64]
       [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
       [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 239.:MNI=.013:SCI=   .0]
       [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W4
# Assumed trench 1.25m wide 0.4 deep, 1693m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 303 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0072:C00011------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W4             8.60     .658 1972.0712_ 4:00  345.65  n/a     .000
                out <=    5.0 01:W4-LID         3.63     .002 1972.0113_17:00  345.75  n/a     .000
           overflow <=    5.0 03:W4-LID-Out     4.97     .644 1972.0712_ 4:00  345.65  n/a     .000
      {MxStoUsed=.3029E-01  m3, TotOvfVol=.1716E+01  m3, N-Ovf=   78, TotDurOvf=  125.hrs}
R0072:C00012------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:W1             8.92     .682 1972.0712_ 4:00  345.65  n/a     .000
                   +      5.0 02:W2             8.22     .630 1972.0712_ 4:00  345.65  n/a     .000
                   +      5.0 02:W3             9.90     .756 1972.0712_ 4:00  345.65  n/a     .000
                   +      5.0 02:W4             8.60     .658 1972.0712_ 4:00  345.65  n/a     .000
                 SUM=     5.0 01:BCD-PH3       35.64    2.727 1972.0712_ 4:00  345.65  n/a     .000
R0072:C00013------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:W1-LID-Out     4.89     .667 1972.0712_ 4:00  345.65  n/a     .000
                   +      5.0 02:W2-LID-Out     4.41     .616 1972.0712_ 4:00  345.65  n/a     .000
                   +      5.0 02:W3-LID-Out     6.09     .740 1972.0712_ 4:00  345.65  n/a     .000
                   +      5.0 02:W4-LID-Out     4.97     .644 1972.0712_ 4:00  345.65  n/a     .000
                 SUM=     5.0 01:BCD-PH3-LI    20.36    2.667 1972.0712_ 4:00  345.65  n/a     .000
#**********************************************************************************************************************
#                   Barrhaven Conservancy Development Phase 3 (WITHOUT INFILTRATION)  - POST DEVELOPMENT CONDITIONS
#**********************************************************************************************************************
#                   Set infiltration to 0 (CN = 99.99) for water balance analysis
#**********************************************************************************************************************
R0072:C00014------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W1         8.92     .895 1972.0712_ 4:00  527.33 .672     .000
       [XIMP=.54:TIMP=.64]
       [LOSS= 2 :CN=100.0]
       [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 244.:MNI=.013:SCI=   .0]
       [IaRECimp=   1.50: IaRECper=   6.00]
       [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0072:C00015------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W2         8.22     .826 1972.0712_ 4:00  527.33 .672     .000
       [XIMP=.54:TIMP=.64]
       [LOSS= 2 :CN=100.0]
       [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 234.:MNI=.013:SCI=   .0]
       [IaRECimp=   1.50: IaRECper=   6.00]
       [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0072:C00016------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W3         9.90     .992 1972.0712_ 4:00  527.33 .672     .000
       [XIMP=.54:TIMP=.64]
       [LOSS= 2 :CN=100.0]
       [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 257.:MNI=.013:SCI=   .0]
       [IaRECimp=   1.50: IaRECper=   6.00]
       [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0072:C00017------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W4         8.60     .864 1972.0712_ 4:00  527.33 .672     .000
       [XIMP=.54:TIMP=.64]
       [LOSS= 2 :CN=100.0]
       [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
       [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 239.:MNI=.013:SCI=   .0]
       [IaRECimp=   1.50: IaRECper=   6.00]
       [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0072:C00018------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:INF-W1         8.92     .895 1972.0712_ 4:00  527.33  n/a     .000
                   +      5.0 02:INF-W2         8.22     .826 1972.0712_ 4:00  527.33  n/a     .000
                   +      5.0 02:INF-W3         9.90     .992 1972.0712_ 4:00  527.33  n/a     .000
```

```
                   +     5.0 02:INF-W4         8.60     .864 1972.0712_ 4:00  527.33  n/a     .000
                SUM=     5.0 01:INF-BCD-PH    35.64    3.577 1972.0712_ 4:00  527.33  n/a     .000
################################################################################
# CONTINUOUS RAINFALL DATA
################################################################################
  ** END OF RUN :   72
*****************************************************************************************************
 RUN#:COMMAND#
R0073:C00001-------------------------------------------------------------------------------------------
     START
      [TZERO =    .00 hrs on 19730101]
      [METOUT=   2    (1=imperial, 2=metric output)]
      [NSTORM=   0 ]
      [NRUN  = 0073 ]
#**********************************************************************************************************************
#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
#**********************************************************************************************************************
#  Project Name: Barrhaven Conservancy Development
#  Project Number: 1474
#  Date          : 2021/Oct/18
#  Modeller      : J.Burnett, P.Eng.
#  Company       : J.F. Sabourin and Associates
#  License #     : 2582634
#**********************************************************************************************************************
# Ottawa International Airport (1967 - 2003)
R0073:C00002-------------------------------------------------------------------------------------------
  *  READ AES DATA
      [Filename  = YOW_1967_2007.123                                               ]
      [Start_date= 1973.0101: End_date= 1973.1231]
      {DT= 60.min: Length= 8760.hrs: WetHrs=  549: DryHrs= 8211: PTOT= 744.90}
      Maximum average rainfall intensities over
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
       30.00    17.25    12.33     7.10     3.63     1.89     1.28      .96      .96    mm/hr
       30.00    34.50    37.00    42.60    43.60    45.40    46.00    46.00    69.20    mm
      19730611 19730808 19730808 19730808 19730808 19730616 19730616 19730616 19731005  date
      Number of rainfall events per following interevent time
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         200      164      143      108       79       61       54       43       37
      Number of events with at least the following durations
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         200      102       66       20        4        0        0        0        0
R0073:C00003-------------------------------------------------------------------------------------------
     COMPUTE API
      [APIini= 50.00: APIkdy= .9000: APIkdt= .9956]
      {APImax= 78.26: APIavg= 20.56: APImin=   .06}
#**********************************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITH INFILTRATION)  - POST DEVELOPMENT CONDITIONS
#**********************************************************************************************************************
R0073:C00004------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W1              8.92     .490 1973.0611_17:00  312.24 .419     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 244.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W1
# Assumed trench 1.25m wide 0.4 deep, 1991m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 344 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0073:C00005------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W1              8.92     .490 1973.0611_17:00  312.24  n/a     .000
                 out <=    5.0 01:W1-LID          4.32     .002 1973.0317_11:15  312.24  n/a     .000
            overflow <=    5.0 03:W1-LID-Out      4.60     .484 1973.0808_20:00  312.24  n/a     .000
     {MxStoUsed=.3438E-01  m3, TotOvfVol=.1437E+01  m3, N-Ovf=   57, TotDurOvf=  104.hrs}
R0073:C00006------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W2              8.22     .453 1973.0611_17:00  312.24 .419     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 234.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W2
# Assumed trench 1.25m wide 0.4 deep, 1896m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 330 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0073:C00007------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W2              8.22     .453 1973.0611_17:00  312.24  n/a     .000
                 out <=    5.0 01:W2-LID          4.07     .002 1973.0317_11:20  312.24  n/a     .000
            overflow <=    5.0 03:W2-LID-Out      4.15     .446 1973.0808_20:00  312.24  n/a     .000
     {MxStoUsed=.3298E-01  m3, TotOvfVol=.1295E+01  m3, N-Ovf=   58, TotDurOvf=  100.hrs}
R0073:C00008------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W3              9.90     .537 1973.0808_20:00  312.24 .419     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 257.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W3
# Assumed trench 1.25m wide 0.4 deep, 1693m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 303 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0073:C00009------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W3              9.90     .537 1973.0808_20:00  312.24  n/a     .000
                 out <=    5.0 01:W3-LID          4.08     .002 1973.0122_19:40  312.33  n/a     .000
            overflow <=    5.0 03:W3-LID-Out      5.82     .530 1973.0808_20:00  312.24  n/a     .000
     {MxStoUsed=.3029E-01  m3, TotOvfVol=.1818E+01  m3, N-Ovf=   69, TotDurOvf=  125.hrs}
R0073:C00010------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W4              8.60     .473 1973.0611_17:00  312.24 .419     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 239.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W4
# Assumed trench 1.25m wide 0.4 deep, 1693m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 303 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0073:C00011------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W4              8.60     .473 1973.0611_17:00  312.24  n/a     .000
                 out <=    5.0 01:W4-LID          3.91     .002 1973.0122_19:40  312.32  n/a     .000
            overflow <=    5.0 03:W4-LID-Out      4.69     .467 1973.0808_20:00  312.24  n/a     .000
     {MxStoUsed=.3030E-01  m3, TotOvfVol=.1464E+01  m3, N-Ovf=   63, TotDurOvf=  113.hrs}
R0073:C00012------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:W1              8.92     .490 1973.0611_17:00  312.24  n/a     .000
                   +     5.0 02:W2              8.22     .453 1973.0611_17:00  312.24  n/a     .000
                   +     5.0 02:W3              9.90     .537 1973.0808_20:00  312.24  n/a     .000
                   +     5.0 02:W4              8.60     .473 1973.0611_17:00  312.24  n/a     .000
                SUM=     5.0 01:BCD-PH3        35.64    1.950 1973.0808_20:00  312.24  n/a     .000
R0073:C00013------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:W1-LID-Out      4.60     .484 1973.0808_20:00  312.24  n/a     .000
                   +     5.0 02:W2-LID-Out      4.15     .446 1973.0808_20:00  312.24  n/a     .000
                   +     5.0 02:W3-LID-Out      5.82     .530 1973.0808_20:00  312.24  n/a     .000
                   +     5.0 02:W4-LID-Out      4.69     .467 1973.0808_20:00  312.24  n/a     .000
                SUM=     5.0 01:BCD-PH3-LI    19.26    1.926 1973.0808_20:00  312.24  n/a     .000
#**********************************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITHOUT INFILTRATION)  - POST DEVELOPMENT CONDITIONS
#**********************************************************************************************************************
#                  Set infiltration to 0 (CN = 99.99) for water balance analysis
#**********************************************************************************************************************
R0073:C00014------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W1          8.92     .693 1973.0611_17:00  478.82 .643     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 244.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0073:C00015------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W2          8.22     .640 1973.0611_17:00  478.82 .643     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 234.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0073:C00016------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W3          9.90     .768 1973.0611_17:00  478.82 .643     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 257.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0073:C00017------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W4          8.60     .669 1973.0611_17:00  478.82 .643     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 239.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0073:C00018------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:INF-W1          8.92     .693 1973.0611_17:00  478.82  n/a     .000
                   +     5.0 02:INF-W2          8.22     .640 1973.0611_17:00  478.82  n/a     .000
                   +     5.0 02:INF-W3          9.90     .768 1973.0611_17:00  478.82  n/a     .000
                   +     5.0 02:INF-W4          8.60     .669 1973.0611_17:00  478.82  n/a     .000
                SUM=     5.0 01:INF-BCD-PH    35.64    2.770 1973.0611_17:00  478.82  n/a     .000
################################################################################
# CONTINUOUS RAINFALL DATA
################################################################################
  ** END OF RUN :   73
*****************************************************************************************************
 RUN#:COMMAND#
R0074:C00001-------------------------------------------------------------------------------------------
     START
      [TZERO =    .00 hrs on 19740101]
      [METOUT=   2    (1=imperial, 2=metric output)]
      [NSTORM=   0 ]
      [NRUN  = 0074 ]
#**********************************************************************************************************************
#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
#**********************************************************************************************************************
#  Project Name: Barrhaven Conservancy Development
#  Project Number: 1474
#  Date          : 2021/Oct/18
#  Modeller      : J.Burnett, P.Eng.
#  Company       : J.F. Sabourin and Associates
#  License #     : 2582634
#**********************************************************************************************************************
# Ottawa International Airport (1967 - 2003)
R0074:C00002-------------------------------------------------------------------------------------------
  *  READ AES DATA
      [Filename  = YOW_1967_2007.123                                               ]
      [Start_date= 1974.0101: End_date= 1974.1231]
      {DT= 60.min: Length= 8760.hrs: WetHrs=  320: DryHrs= 8440: PTOT= 386.20}
      Maximum average rainfall intensities over
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
       20.60    15.40    10.37     5.18     2.98     1.63     1.08      .81      .54    mm/hr
       20.60    30.80    31.10    31.10    35.70    39.00    39.00    39.00    39.00    mm
      19740718 19740719 19740719 19740719 19740305 19740305 19740306 19740306 19740307  date
      Number of rainfall events per following interevent time
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         129      105       93       77       63       50       38       33       23
      Number of events with at least the following durations
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         128       66       32       10        3        0        0        0        0
R0074:C00003-------------------------------------------------------------------------------------------
     COMPUTE API
      [APIini= 50.00: APIkdy= .9000: APIkdt= .9956]
      {APImax= 52.93: APIavg= 11.36: APImin=   .00}
#**********************************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITH INFILTRATION)  - POST DEVELOPMENT CONDITIONS
#**********************************************************************************************************************
R0074:C00004------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W1              8.92     .275 1974.0719_ 0:00  143.34 .371     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 244.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W1
# Assumed trench 1.25m wide 0.4 deep, 1991m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 344 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0074:C00005------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W1              8.92     .275 1974.0719_ 0:00  143.34  n/a     .000
                 out <=    5.0 01:W1-LID          5.98     .002 1974.0304_17:50  143.34  n/a     .000
            overflow <=    5.0 03:W1-LID-Out      2.94     .272 1974.0719_ 0:00  143.34  n/a     .000
     {MxStoUsed=.3439E-01  m3, TotOvfVol=.4220E+00  m3, N-Ovf=   29, TotDurOvf=   38.hrs}
R0074:C00006------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W2              8.22     .253 1974.0719_ 0:00  143.34 .371     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 234.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W2
# Assumed trench 1.25m wide 0.4 deep, 1896m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 330 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0074:C00007------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W2              8.22     .253 1974.0719_ 0:00  143.34  n/a     .000
                 out <=    5.0 01:W2-LID          5.61     .002 1974.0304_17:55  143.34  n/a     .000
            overflow <=    5.0 03:W2-LID-Out      2.61     .251 1974.0719_ 0:00  143.34  n/a     .000
     {MxStoUsed=.3295E-01  m3, TotOvfVol=.3738E+00  m3, N-Ovf=   21, TotDurOvf=   35.hrs}
R0074:C00008------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W3              9.90     .305 1974.0719_ 0:00  143.34 .371     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 257.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W3
# Assumed trench 1.25m wide 0.4 deep, 1693m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 303 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0074:C00009------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W3              9.90     .305 1974.0719_ 0:00  143.34  n/a     .000
                 out <=    5.0 01:W3-LID          5.76     .002 1974.0121_14:25  143.37  n/a     .000
            overflow <=    5.0 03:W3-LID-Out      4.14     .302 1974.0719_ 0:00  143.34  n/a     .000
     {MxStoUsed=.3029E-01  m3, TotOvfVol=.5941E+00  m3, N-Ovf=   42, TotDurOvf=   51.hrs}
R0074:C00010------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W4              8.60     .265 1974.0719_ 0:00  143.34 .371     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 239.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W4
# Assumed trench 1.25m wide 0.4 deep, 1693m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 303 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0074:C00011------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W4              8.60     .265 1974.0719_ 0:00  143.34  n/a     .000
                 out <=    5.0 01:W4-LID          5.45     .002 1974.0121_14:30  143.37  n/a     .000
            overflow <=    5.0 03:W4-LID-Out      3.15     .263 1974.0719_ 0:00  143.34  n/a     .000
     {MxStoUsed=.3029E-01  m3, TotOvfVol=.4513E+00  m3, N-Ovf=   37, TotDurOvf=   43.hrs}
R0074:C00012------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:W1              8.92     .275 1974.0719_ 0:00  143.34  n/a     .000
                   +     5.0 02:W2              8.22     .253 1974.0719_ 0:00  143.34  n/a     .000
                   +     5.0 02:W3              9.90     .305 1974.0719_ 0:00  143.34  n/a     .000
                   +     5.0 02:W4              8.60     .265 1974.0719_ 0:00  143.34  n/a     .000
                SUM=     5.0 01:BCD-PH3        35.64    1.097 1974.0719_ 0:00  143.34  n/a     .000
R0074:C00013------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:W1-LID-Out      2.94     .272 1974.0719_ 0:00  143.34  n/a     .000
                   +     5.0 02:W2-LID-Out      2.61     .251 1974.0719_ 0:00  143.34  n/a     .000
                   +     5.0 02:W3-LID-Out      4.14     .302 1974.0719_ 0:00  143.34  n/a     .000
                   +     5.0 02:W4-LID-Out      3.15     .263 1974.0719_ 0:00  143.34  n/a     .000
                SUM=     5.0 01:BCD-PH3-LI    12.84    1.088 1974.0719_ 0:00  143.34  n/a     .000
#**********************************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITHOUT INFILTRATION)  - POST DEVELOPMENT CONDITIONS
#**********************************************************************************************************************
#                  Set infiltration to 0 (CN = 99.99) for water balance analysis
#**********************************************************************************************************************
R0074:C00014------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W1          8.92     .440 1974.0719_ 0:00  211.02 .546     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 244.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0074:C00015------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W2          8.22     .406 1974.0719_ 0:00  211.02 .546     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 234.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0074:C00016------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W3          9.90     .487 1974.0719_ 0:00  211.02 .546     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 257.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0074:C00017------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W4          8.60     .425 1974.0719_ 0:00  211.02 .546     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 239.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0074:C00018------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:INF-W1          8.92     .440 1974.0719_ 0:00  211.02  n/a     .000
                   +     5.0 02:INF-W2          8.22     .406 1974.0719_ 0:00  211.02  n/a     .000
                   +     5.0 02:INF-W3          9.90     .487 1974.0719_ 0:00  211.02  n/a     .000
                   +     5.0 02:INF-W4          8.60     .425 1974.0719_ 0:00  211.02  n/a     .000
                SUM=     5.0 01:INF-BCD-PH    35.64    1.758 1974.0719_ 0:00  211.02  n/a     .000
################################################################################
# CONTINUOUS RAINFALL DATA
################################################################################
  ** END OF RUN :   74
*****************************************************************************************************
 RUN#:COMMAND#
R0075:C00001-------------------------------------------------------------------------------------------
     START
      [TZERO =    .00 hrs on 19750101]
      [METOUT=   2    (1=imperial, 2=metric output)]
```

```
      [NSTORM=   0 ]
      [NRUN  = 0075 ]
#**************************************************************************************************************
#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
#**************************************************************************************************************
#  Project Name: Barrhaven Conservancy Development
#  Project Number: 1474
#  Date        : 2021/Oct/18
#  Modeller    : J.Burnett, P.Eng.
#  Company     : J.F. Sabourin and Associates
#  License #   : 2582634
#**************************************************************************************************************
# Ottawa International Airport (1967 - 2003)
R0075:C00002--------------------------------------------------------------------------------------
  *  READ AES DATA
      [Filename  = YOW_1967_2007.123                                                  ]
      [Start_date= 1975.0101: End_date= 1975.1231]
      {DT= 60.min: Length= 8760.hrs: WetHrs=  344: DryHrs= 8416: PTOT= 535.50}
      Maximum average rainfall intensities over
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
       34.80    18.40    12.53     6.32     3.33     1.73     1.15      .87      .62    mm/hr
       34.80    36.80    37.60    37.90    40.00    41.50    41.50    41.80    44.40    mm
      19750708 19750720 19750720 19750720 19750721 19750721 19750721 19750721 19750928  date
      Number of rainfall events per following interevent time
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         136      118       99       78       61       49       40       33       25
      Number of events with at least the following durations
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         135       70       40       17        1        0        0        0        0
R0075:C00003--------------------------------------------------------------------------------------
     COMPUTE API
      [APIini= 50.00: APIkdy= .9000: APIkdt= .9956]
      {APImax= 73.23: APIavg= 15.16: APImin=   .00}
#**************************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITH INFILTRATION)  - POST DEVELOPMENT CONDITIONS
#**************************************************************************************************************
R0075:C00004------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W1             8.92     .616 1975.0708_17:00  224.27 .419     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 244.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W1
# Assumed trench 1.25m wide 0.4 deep, 1991m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 344 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0075:C00005------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W1             8.92     .616 1975.0708_17:00  224.27  n/a     .000
                out <=    5.0 01:W1-LID         4.85     .002 1975.0605_21:25  224.26  n/a     .000
           overflow <=    5.0 03:W1-LID-Out     4.07     .602 1975.0708_17:00  224.27  n/a     .000
     {MxStoUsed=.3438E-01  m3, TotOvfVol=.9117E+00  m3, N-Ovf=   50, TotDurOvf=   53.hrs}
R0075:C00006------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W2             8.22     .569 1975.0708_17:00  224.27 .419     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 234.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W2
# Assumed trench 1.25m wide 0.4 deep, 1896m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 330 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0075:C00007------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W2             8.22     .569 1975.0708_17:00  224.26  n/a     .000
                out <=    5.0 01:W2-LID         4.59     .002 1975.0605_21:45  224.27  n/a     .000
           overflow <=    5.0 03:W2-LID-Out     3.63     .555 1975.0708_17:00  224.26  n/a     .000
     {MxStoUsed=.3296E-01  m3, TotOvfVol=.8142E+00  m3, N-Ovf=   49, TotDurOvf=   49.hrs}
R0075:C00008------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W3             9.90     .683 1975.0708_17:00  224.27 .419     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 257.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W3
# Assumed trench 1.25m wide 0.4 deep, 1693m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 303 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0075:C00009------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W3             9.90     .683 1975.0708_17:00  224.27  n/a     .000
                out <=    5.0 01:W3-LID         4.54     .002 1975.0109_ 6:25  224.32  n/a     .000
           overflow <=    5.0 03:W3-LID-Out     5.36     .667 1975.0708_17:00  224.27  n/a     .000
     {MxStoUsed=.3027E-01  m3, TotOvfVol=.1202E+01  m3, N-Ovf=   60, TotDurOvf=   72.hrs}
R0075:C00010------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W4             8.60     .595 1975.0708_17:00  224.27 .419     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 239.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W4
# Assumed trench 1.25m wide 0.4 deep, 1693m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 303 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0075:C00011------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W4             8.60     .595 1975.0708_17:00  224.27  n/a     .000
                out <=    5.0 01:W4-LID         4.38     .002 1975.0109_ 6:25  224.32  n/a     .000
           overflow <=    5.0 03:W4-LID-Out     4.22     .581 1975.0708_17:00  224.27  n/a     .000
     {MxStoUsed=.3028E-01  m3, TotOvfVol=.9465E+00  m3, N-Ovf=   48, TotDurOvf=   59.hrs}
R0075:C00012------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:W1             8.92     .616 1975.0708_17:00  224.27  n/a     .000
                   +      5.0 02:W2             8.22     .569 1975.0708_17:00  224.26  n/a     .000
                   +      5.0 02:W3             9.90     .683 1975.0708_17:00  224.27  n/a     .000
                   +      5.0 02:W4             8.60     .595 1975.0708_17:00  224.27  n/a     .000
                SUM=      5.0 01:BCD-PH3       35.64    2.462 1975.0708_17:00  224.27  n/a     .000
R0075:C00013------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:W1-LID-Out     4.07     .602 1975.0708_17:00  224.27  n/a     .000
                   +      5.0 02:W2-LID-Out     3.63     .555 1975.0708_17:00  224.26  n/a     .000
                   +      5.0 02:W3-LID-Out     5.36     .667 1975.0708_17:00  224.27  n/a     .000
                   +      5.0 02:W4-LID-Out     4.22     .581 1975.0708_17:00  224.27  n/a     .000
                SUM=      5.0 01:BCD-PH3-LI    17.27    2.404 1975.0708_17:00  224.26  n/a     .000
#**************************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITHOUT INFILTRATION)  - POST DEVELOPMENT CONDITIONS
#**************************************************************************************************************
#                  Set infiltration to 0 (CN = 99.99) for water balance analysis
#**************************************************************************************************************
R0075:C00014------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W1         8.92     .828 1975.0708_17:00  336.48 .628     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 244.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0075:C00015------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W2         8.22     .764 1975.0708_17:00  336.48 .628     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 234.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0075:C00016------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W3         9.90     .917 1975.0708_17:00  336.48 .628     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 257.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0075:C00017------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W4         8.60     .799 1975.0708_17:00  336.48 .628     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 239.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0075:C00018------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:INF-W1         8.92     .828 1975.0708_17:00  336.48  n/a     .000
                   +      5.0 02:INF-W2         8.22     .764 1975.0708_17:00  336.48  n/a     .000
                   +      5.0 02:INF-W3         9.90     .917 1975.0708_17:00  336.48  n/a     .000
                   +      5.0 02:INF-W4         8.60     .799 1975.0708_17:00  336.48  n/a     .000
                SUM=      5.0 01:INF-BCD-PH    35.64    3.307 1975.0708_17:00  336.48  n/a     .000
#############################################################################
# CONTINUOUS RAINFALL DATA
#############################################################################
  ** END OF RUN :   75

*********************************************************************************************

 RUN#:COMMAND#
R0076:C00001--------------------------------------------------------------------------------------
     START
      [TZERO =    .00 hrs on 19760101]
      [METOUT=   2    (1=imperial, 2=metric output)]
      [NSTORM=   0 ]
      [NRUN  = 0076 ]
#**************************************************************************************************************
#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
#**************************************************************************************************************
#  Project Name: Barrhaven Conservancy Development
#  Project Number: 1474
#  Date        : 2021/Oct/18
#  Modeller    : J.Burnett, P.Eng.
#  Company     : J.F. Sabourin and Associates
#  License #   : 2582634
#**************************************************************************************************************
# Ottawa International Airport (1967 - 2003)
R0076:C00002--------------------------------------------------------------------------------------
  *  READ AES DATA
      [Filename  = YOW_1967_2007.123                                                  ]
      [Start_date= 1976.0101: End_date= 1976.1230]
      {DT= 60.min: Length= 8064.hrs: WetHrs=  390: DryHrs= 7674: PTOT= 493.20}
      Maximum average rainfall intensities over
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
       14.00     8.90     6.43     4.65     2.35     1.39      .97      .99      .80    mm/hr
       14.00    17.80    19.30    27.90    28.20    33.30    35.10    47.60    57.50    mm
      19760828 19760828 19760828 19760828 19760828 19760920 19760520 19760520 19760921  date
      Number of rainfall events per following interevent time
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         164      133      117       89       72       62       46       40       28
      Number of events with at least the following durations
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         163       80       47       15        2        0        0        0        0
R0076:C00003--------------------------------------------------------------------------------------
     COMPUTE API
      [APIini= 50.00: APIkdy= .9000: APIkdt= .9956]
      {APImax= 59.66: APIavg= 15.35: APImin=   .02}
#**************************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITH INFILTRATION)  - POST DEVELOPMENT CONDITIONS
#**************************************************************************************************************
R0076:C00004------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
 *  CONTINUOUS STANDHYD   5.0 01:W1             8.92     .185 1976.0828_19:00  184.75 .375     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 244.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W1
# Assumed trench 1.25m wide 0.4 deep, 1991m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 344 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0076:C00005------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W1             8.92     .185 1976.0828_19:00  184.75  n/a     .000
                out <=    5.0 01:W1-LID         5.54     .002 1976.0331_21:55  184.75  n/a     .000
           overflow <=    5.0 03:W1-LID-Out     3.38     .183 1976.0828_19:00  184.75  n/a     .000
     {MxStoUsed=.3440E-01  m3, TotOvfVol=.6244E+00  m3, N-Ovf=   51, TotDurOvf=   65.hrs}
R0076:C00006------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
 *  CONTINUOUS STANDHYD   5.0 01:W2             8.22     .171 1976.0828_19:00  184.75 .375     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 234.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W2
# Assumed trench 1.25m wide 0.4 deep, 1896m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 330 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0076:C00007------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W2             8.22     .171 1976.0828_19:00  184.75  n/a     .000
                out <=    5.0 01:W2-LID         5.23     .002 1976.0331_22:00  184.75  n/a     .000
           overflow <=    5.0 03:W2-LID-Out     2.99     .168 1976.0828_19:00  184.75  n/a     .000
     {MxStoUsed=.3299E-01  m3, TotOvfVol=.5524E+00  m3, N-Ovf=   52, TotDurOvf=   62.hrs}
R0076:C00008------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
 *  CONTINUOUS STANDHYD   5.0 01:W3             9.90     .205 1976.0828_19:00  184.75 .375     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 257.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W3
# Assumed trench 1.25m wide 0.4 deep, 1693m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 303 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0076:C00009------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W3             9.90     .205 1976.0828_19:00  184.75  n/a     .000
                out <=    5.0 01:W3-LID         5.24     .002 1976.0313_ 8:20  184.79  n/a     .000
           overflow <=    5.0 03:W3-LID-Out     4.66     .203 1976.0828_19:00  184.75  n/a     .000
     {MxStoUsed=.3028E-01  m3, TotOvfVol=.8613E+00  m3, N-Ovf=   67, TotDurOvf=   82.hrs}
R0076:C00010------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
 *  CONTINUOUS STANDHYD   5.0 01:W4             8.60     .179 1976.0828_19:00  184.75 .375     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 239.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W4
# Assumed trench 1.25m wide 0.4 deep, 1693m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 303 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0076:C00011------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W4             8.60     .179 1976.0828_19:00  184.75  n/a     .000
                out <=    5.0 01:W4-LID         5.01     .002 1976.0313_ 8:20  184.79  n/a     .000
           overflow <=    5.0 03:W4-LID-Out     3.59     .176 1976.0828_19:00  184.75  n/a     .000
     {MxStoUsed=.3029E-01  m3, TotOvfVol=.6633E+00  m3, N-Ovf=   56, TotDurOvf=   73.hrs}
R0076:C00012------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:W1             8.92     .185 1976.0828_19:00  184.75  n/a     .000
                   +      5.0 02:W2             8.22     .171 1976.0828_19:00  184.75  n/a     .000
                   +      5.0 02:W3             9.90     .205 1976.0828_19:00  184.75  n/a     .000
                   +      5.0 02:W4             8.60     .179 1976.0828_19:00  184.75  n/a     .000
                SUM=      5.0 01:BCD-PH3       35.64     .740 1976.0828_19:00  184.75  n/a     .000
R0076:C00013------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:W1-LID-Out     3.38     .183 1976.0828_19:00  184.75  n/a     .000
                   +      5.0 02:W2-LID-Out     2.99     .168 1976.0828_19:00  184.75  n/a     .000
                   +      5.0 02:W3-LID-Out     4.66     .203 1976.0828_19:00  184.75  n/a     .000
                   +      5.0 02:W4-LID-Out     3.59     .176 1976.0828_19:00  184.75  n/a     .000
                SUM=      5.0 01:BCD-PH3-LI    14.62     .730 1976.0828_19:00  184.75  n/a     .000
#**************************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITHOUT INFILTRATION)  - POST DEVELOPMENT CONDITIONS
#**************************************************************************************************************
#                  Set infiltration to 0 (CN = 99.99) for water balance analysis
#**************************************************************************************************************
R0076:C00014------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W1         8.92     .264 1976.0828_19:00  279.75 .567     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 244.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0076:C00015------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W2         8.22     .244 1976.0828_19:00  279.75 .567     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 234.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0076:C00016------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W3         9.90     .292 1976.0828_19:00  279.75 .567     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 257.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0076:C00017------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W4         8.60     .255 1976.0828_19:00  279.75 .567     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 239.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0076:C00018------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:INF-W1         8.92     .264 1976.0828_19:00  279.75  n/a     .000
                   +      5.0 02:INF-W2         8.22     .244 1976.0828_19:00  279.75  n/a     .000
                   +      5.0 02:INF-W3         9.90     .292 1976.0828_19:00  279.75  n/a     .000
                   +      5.0 02:INF-W4         8.60     .255 1976.0828_19:00  279.75  n/a     .000
                SUM=      5.0 01:INF-BCD-PH    35.64    1.056 1976.0828_19:00  279.75  n/a     .000
#############################################################################
# CONTINUOUS RAINFALL DATA
#############################################################################
  ** END OF RUN :   76

*********************************************************************************************

 RUN#:COMMAND#
R0077:C00001--------------------------------------------------------------------------------------
     START
      [TZERO =    .00 hrs on 19770101]
      [METOUT=   2    (1=imperial, 2=metric output)]
      [NSTORM=   0 ]
      [NRUN  = 0077 ]
#**************************************************************************************************************
#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
#**************************************************************************************************************
#  Project Name: Barrhaven Conservancy Development
#  Project Number: 1474
#  Date        : 2021/Oct/18
#  Modeller    : J.Burnett, P.Eng.
#  Company     : J.F. Sabourin and Associates
#  License #   : 2582634
#**************************************************************************************************************
# Ottawa International Airport (1967 - 2003)
R0077:C00002--------------------------------------------------------------------------------------
  *  READ AES DATA
      [Filename  = YOW_1967_2007.123                                                  ]
      [Start_date= 1977.0101: End_date= 1977.1231]
      {DT= 60.min: Length= 8016.hrs: WetHrs=  512: DryHrs= 7504: PTOT= 677.80}
```

```
      Maximum average rainfall intensities over
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
       21.30    15.20    10.40     6.53     3.30     1.66     1.40     1.06      .73    mm/hr
       21.30    30.40    31.20    39.20    39.60    39.80    50.40    51.00    52.40    mm
      19770717 19770717 19770717 19770901 19770902 19770314 19770314 19770314 19770718  date
      Number of rainfall events per following interevent time
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         172      142      126       99       78       63       53       42       30
      Number of events with at least the following durations
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         171       88       60       22        5        1        0        0        0
R0077:C00003------------------------------------------------------------------------------------
     COMPUTE API
       [APIini= 50.00: APIkdy= .9000: APIkdt= .9956]
       {APImax= 74.80: APIavg= 20.62: APImin=  1.63}
#*******************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITH INFILTRATION)  - POST DEVELOPMENT CONDITIONS
#*******************************************************************************************************
R0077:C00004------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W1             8.92     .325 1977.0901_23:00  281.59 .415     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 244.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W1
# Assumed trench 1.25m wide 0.4 deep, 1991m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 344 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0077:C00005------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W1             8.92     .325 1977.0901_23:00  281.59  n/a     .000
                out <=    5.0 01:W1-LID         4.96     .002 1977.0305_ 0:15  281.59  n/a     .000
           overflow <=    5.0 03:W1-LID-Out     3.96     .320 1977.0901_23:00  281.59  n/a     .000
     {MxStoUsed=.3439E-01  m3, TotOvfVol=.1115E+01  m3, N-Ovf=   72, TotDurOvf=  125.hrs}
R0077:C00006------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W2             8.22     .300 1977.0901_23:00  281.59 .415     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 234.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W2
# Assumed trench 1.25m wide 0.4 deep, 1896m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 330 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0077:C00007------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W2             8.22     .300 1977.0901_23:00  281.59  n/a     .000
                out <=    5.0 01:W2-LID         4.68     .002 1977.0313_ 7:45  281.59  n/a     .000
           overflow <=    5.0 03:W2-LID-Out     3.54     .296 1977.0901_23:00  281.59  n/a     .000
     {MxStoUsed=.3299E-01  m3, TotOvfVol=.9960E+00  m3, N-Ovf=   67, TotDurOvf=  122.hrs}
R0077:C00008------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W3             9.90     .357 1977.0901_23:00  281.59 .415     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 257.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W3
# Assumed trench 1.25m wide 0.4 deep, 1693m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 303 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0077:C00009------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W3             9.90     .357 1977.0901_23:00  281.59  n/a     .000
                out <=    5.0 01:W3-LID         4.67     .002 1977.0304_19:50  281.66  n/a     .000
           overflow <=    5.0 03:W3-LID-Out     5.23     .352 1977.0901_23:00  281.59  n/a     .000
     {MxStoUsed=.3026E-01  m3, TotOvfVol=.1474E+01  m3, N-Ovf=   74, TotDurOvf=  144.hrs}
R0077:C00010------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W4             8.60     .313 1977.0901_23:00  281.59 .415     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 239.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W4
# Assumed trench 1.25m wide 0.4 deep, 1693m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 303 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0077:C00011------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W4             8.60     .313 1977.0901_23:00  281.59  n/a     .000
                out <=    5.0 01:W4-LID         4.47     .002 1977.0304_19:50  281.66  n/a     .000
           overflow <=    5.0 03:W4-LID-Out     4.13     .309 1977.0901_23:00  281.59  n/a     .000
     {MxStoUsed=.3029E-01  m3, TotOvfVol=.1163E+01  m3, N-Ovf=   75, TotDurOvf=  134.hrs}
R0077:C00012------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:W1             8.92     .325 1977.0901_23:00  281.59  n/a     .000
                     +    5.0 02:W2             8.22     .300 1977.0901_23:00  281.59  n/a     .000
                     +    5.0 02:W3             9.90     .357 1977.0901_23:00  281.59  n/a     .000
                     +    5.0 02:W4             8.60     .313 1977.0901_23:00  281.59  n/a     .000
                  SUM=    5.0 01:BCD-PH3       35.64    1.295 1977.0901_23:00  281.59  n/a     .000
R0077:C00013------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:W1-LID-Out     3.96     .320 1977.0901_23:00  281.59  n/a     .000
                     +    5.0 02:W2-LID-Out     3.54     .296 1977.0901_23:00  281.59  n/a     .000
                     +    5.0 02:W3-LID-Out     5.23     .352 1977.0901_23:00  281.59  n/a     .000
                     +    5.0 02:W4-LID-Out     4.13     .309 1977.0901_23:00  281.59  n/a     .000
                  SUM=    5.0 01:BCD-PH3-LI    16.86    1.278 1977.0901_23:00  281.59  n/a     .000
#*******************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITHOUT INFILTRATION)  - POST DEVELOPMENT CONDITIONS
#*******************************************************************************************************
#                  Set infiltration to 0 (CN = 99.99) for water balance analysis
#*******************************************************************************************************
R0077:C00014------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W1         8.92     .474 1977.0717_16:00  430.70 .635     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 244.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0077:C00015------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W2         8.22     .438 1977.0717_16:00  430.70 .635     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 234.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0077:C00016------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W3         9.90     .525 1977.0717_16:00  430.70 .635     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 257.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0077:C00017------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W4         8.60     .458 1977.0717_16:00  430.70 .635     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 239.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0077:C00018------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:INF-W1         8.92     .474 1977.0717_16:00  430.70  n/a     .000
                     +    5.0 02:INF-W2         8.22     .438 1977.0717_16:00  430.70  n/a     .000
                     +    5.0 02:INF-W3         9.90     .525 1977.0717_16:00  430.70  n/a     .000
                     +    5.0 02:INF-W4         8.60     .458 1977.0717_16:00  430.70  n/a     .000
                  SUM=    5.0 01:INF-BCD-PH    35.64    1.895 1977.0717_16:00  430.70  n/a     .000
##################################################################################
# CONTINUOUS RAINFALL DATA
##################################################################################
  ** END OF RUN :   77

****************************************************************************************************





 RUN#:COMMAND#
R0078:C00001------------------------------------------------------------------------------------
     START
      [TZERO =    .00 hrs on 19780101]
      [METOUT=   2    (1=imperial, 2=metric output)]
      [NSTORM=   0 ]
      [NRUN  = 0078 ]
#*******************************************************************************************************
#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
#*******************************************************************************************************
#  Project Name: Barrhaven Conservancy Development
#  Project Number: 1474
#  Date         : 2021/Oct/18
#  Modeller     : J.Burnett, P.Eng.
#  Company      : J.F. Sabourin and Associates
#  License #    : 2582634
#*******************************************************************************************************
# Ottawa International Airport (1967 - 2003)
R0078:C00002------------------------------------------------------------------------------------
  *  READ AES DATA
      [Filename  = YOW_1967_2007.123                                           ]
      [Start_date= 1978.0101: End_date= 1978.1231]
      {DT= 60.min: Length= 8040.hrs: WetHrs=  409: DryHrs= 7631: PTOT= 641.40}
      Maximum average rainfall intensities over
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
       36.00    18.15    12.10     6.05     3.04     1.64     1.13      .87      .58    mm/hr
       36.00    36.30    36.30    36.30    36.50    39.40    40.60    41.60    41.60    mm
      19780618 19780618 19780618 19780618 19780619 19780411 19780412 19780620 19780621  date
      Number of rainfall events per following interevent time
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         154      128      118       97       71       58       51       46       33
      Number of events with at least the following durations
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         154       75       44       18        5        0        0        0        0
R0078:C00003------------------------------------------------------------------------------------
     COMPUTE API
       [APIini= 50.00: APIkdy= .9000: APIkdt= .9956]
       {APImax= 65.36: APIavg= 19.25: APImin=   .25}
#*******************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITH INFILTRATION)  - POST DEVELOPMENT CONDITIONS
#*******************************************************************************************************
R0078:C00004------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W1             8.92     .648 1978.0618_17:00  273.52 .426     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 244.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W1
# Assumed trench 1.25m wide 0.4 deep, 1991m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 344 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0078:C00005------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W1             8.92     .648 1978.0618_17:00  273.52  n/a     .000
                out <=    5.0 01:W1-LID         4.87     .002 1978.0108_ 5:30  273.53  n/a     .000
           overflow <=    5.0 03:W1-LID-Out     4.05     .633 1978.0618_17:00  273.52  n/a     .000
     {MxStoUsed=.3441E-01  m3, TotOvfVol=.1107E+01  m3, N-Ovf=   59, TotDurOvf=   98.hrs}
R0078:C00006------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W2             8.22     .598 1978.0618_17:00  273.52 .426     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 234.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W2
# Assumed trench 1.25m wide 0.4 deep, 1896m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 330 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0078:C00007------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W2             8.22     .598 1978.0618_17:00  273.52  n/a     .000
                out <=    5.0 01:W2-LID         4.61     .002 1978.0108_ 5:40  273.53  n/a     .000
           overflow <=    5.0 03:W2-LID-Out     3.61     .584 1978.0618_17:00  273.52  n/a     .000
     {MxStoUsed=.3300E-01  m3, TotOvfVol=.9866E+00  m3, N-Ovf=   63, TotDurOvf=   93.hrs}
R0078:C00008------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W3             9.90     .718 1978.0618_17:00  273.53 .426     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 257.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W3
# Assumed trench 1.25m wide 0.4 deep, 1693m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 303 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0078:C00009------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W3             9.90     .718 1978.0618_17:00  273.52  n/a     .000
                out <=    5.0 01:W3-LID         4.55     .002 1978.0108_ 2:00  273.60  n/a     .000
           overflow <=    5.0 03:W3-LID-Out     5.35     .702 1978.0618_17:00  273.52  n/a     .000
     {MxStoUsed=.3030E-01  m3, TotOvfVol=.1464E+01  m3, N-Ovf=   72, TotDurOvf=  118.hrs}
R0078:C00010------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W4             8.60     .625 1978.0618_17:00  273.52 .426     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 239.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W4
# Assumed trench 1.25m wide 0.4 deep, 1693m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 303 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0078:C00011------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W4             8.60     .625 1978.0618_17:00  273.52  n/a     .000
                out <=    5.0 01:W4-LID         4.39     .002 1978.0108_ 2:00  273.60  n/a     .000
           overflow <=    5.0 03:W4-LID-Out     4.21     .611 1978.0618_17:00  273.52  n/a     .000
     {MxStoUsed=.3030E-01  m3, TotOvfVol=.1152E+01  m3, N-Ovf=   65, TotDurOvf=  106.hrs}
R0078:C00012------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:W1             8.92     .648 1978.0618_17:00  273.52  n/a     .000
                     +    5.0 02:W2             8.22     .598 1978.0618_17:00  273.52  n/a     .000
                     +    5.0 02:W3             9.90     .718 1978.0618_17:00  273.52  n/a     .000
                     +    5.0 02:W4             8.60     .625 1978.0618_17:00  273.52  n/a     .000
                  SUM=    5.0 01:BCD-PH3       35.64    2.589 1978.0618_17:00  273.52  n/a     .000
R0078:C00013------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:W1-LID-Out     4.05     .633 1978.0618_17:00  273.52  n/a     .000
                     +    5.0 02:W2-LID-Out     3.61     .584 1978.0618_17:00  273.52  n/a     .000
                     +    5.0 02:W3-LID-Out     5.35     .702 1978.0618_17:00  273.52  n/a     .000
                     +    5.0 02:W4-LID-Out     4.21     .611 1978.0618_17:00  273.52  n/a     .000
                  SUM=    5.0 01:BCD-PH3-LI    17.22    2.530 1978.0618_17:00  273.52  n/a     .000
#*******************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITHOUT INFILTRATION)  - POST DEVELOPMENT CONDITIONS
#*******************************************************************************************************
#                  Set infiltration to 0 (CN = 99.99) for water balance analysis
#*******************************************************************************************************
R0078:C00014------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W1         8.92     .862 1978.0618_17:00  413.06 .644     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 244.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0078:C00015------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W2         8.22     .795 1978.0618_17:00  413.06 .644     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 234.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0078:C00016------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W3         9.90     .940 1978.0618_17:00  413.06 .644     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 257.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0078:C00017------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W4         8.60     .831 1978.0618_17:00  413.06 .644     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 239.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0078:C00018------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:INF-W1         8.92     .862 1978.0618_17:00  413.06  n/a     .000
                     +    5.0 02:INF-W2         8.22     .795 1978.0618_17:00  413.06  n/a     .000
                     +    5.0 02:INF-W3         9.90     .940 1978.0618_17:00  413.06  n/a     .000
                     +    5.0 02:INF-W4         8.60     .831 1978.0618_17:00  413.06  n/a     .000
                  SUM=    5.0 01:INF-BCD-PH    35.64    3.429 1978.0618_17:00  413.06  n/a     .000
##################################################################################
# CONTINUOUS RAINFALL DATA
##################################################################################
  ** END OF RUN :   78

****************************************************************************************************





 RUN#:COMMAND#
R0079:C00001------------------------------------------------------------------------------------
     START
      [TZERO =    .00 hrs on 19790101]
      [METOUT=   2    (1=imperial, 2=metric output)]
      [NSTORM=   0 ]
      [NRUN  = 0079 ]
#*******************************************************************************************************
#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
#*******************************************************************************************************
#  Project Name: Barrhaven Conservancy Development
#  Project Number: 1474
#  Date         : 2021/Oct/18
#  Modeller     : J.Burnett, P.Eng.
#  Company      : J.F. Sabourin and Associates
#  License #    : 2582634
#*******************************************************************************************************
# Ottawa International Airport (1967 - 2003)
R0079:C00002------------------------------------------------------------------------------------
  *  READ AES DATA
      [Filename  = YOW_1967_2007.123                                           ]
      [Start_date= 1979.0101: End_date= 1979.1231]
      {DT= 60.min: Length= 8760.hrs: WetHrs=  546: DryHrs= 8214: PTOT= 866.50}
      Maximum average rainfall intensities over
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
       34.90    22.00    14.67     7.33     5.14     2.63     1.75     1.31      .88    mm/hr
       34.90    44.00    44.00    44.00    61.70    63.00    63.00    63.00    63.00    mm
      19790616 19790616 19790616 19790616 19790914 19790915 19790915 19790915 19790917  date
      Number of rainfall events per following interevent time
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         188      147      129      103       86       60       53       43       36
      Number of events with at least the following durations
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         187       97       65       25        6        1        0        0        0
R0079:C00003------------------------------------------------------------------------------------
     COMPUTE API
       [APIini= 50.00: APIkdy= .9000: APIkdt= .9956]
       {APImax= 78.42: APIavg= 23.13: APImin=   .13}
#*******************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITH INFILTRATION)  - POST DEVELOPMENT CONDITIONS
#*******************************************************************************************************
```

```
R0079:C00004------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W1             8.92     .680 1979.0616_14:00  383.97 .443     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 244.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W1
# Assumed trench 1.25m wide 0.4 deep, 1991m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 344 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0079:C00005------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W1             8.92     .680 1979.0616_14:00  383.97  n/a     .000
                out <=    5.0 01:W1-LID         3.82     .002 1979.0402_13:25  383.98  n/a     .000
           overflow <=    5.0 03:W1-LID-Out     5.10     .670 1979.0616_14:00  383.97  n/a     .000
     {MxStoUsed=.3440E-01  m3, TotOvfVol=.1957E+01  m3, N-Ovf=   79, TotDurOvf=  134.hrs}
R0079:C00006------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W2             8.22     .627 1979.0616_14:00  383.97 .443     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 234.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W2
# Assumed trench 1.25m wide 0.4 deep, 1896m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 330 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0079:C00007------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W2             8.22     .627 1979.0616_14:00  383.97  n/a     .000
                out <=    5.0 01:W2-LID         3.62     .002 1979.0402_13:30  383.98  n/a     .000
           overflow <=    5.0 03:W2-LID-Out     4.60     .618 1979.0616_14:00  383.97  n/a     .000
     {MxStoUsed=.3300E-01  m3, TotOvfVol=.1765E+01  m3, N-Ovf=   75, TotDurOvf=  131.hrs}
R0079:C00008------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W3             9.90     .754 1979.0616_14:00  383.97 .443     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 257.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W3
# Assumed trench 1.25m wide 0.4 deep, 1693m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 303 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0079:C00009------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W3             9.90     .754 1979.0616_14:00  383.97  n/a     .000
                out <=    5.0 01:W3-LID         3.56     .002 1979.0101_ 1:45  384.08  n/a     .000
           overflow <=    5.0 03:W3-LID-Out     6.34     .743 1979.0616_14:00  383.97  n/a     .000
     {MxStoUsed=.3030E-01  m3, TotOvfVol=.2435E+01  m3, N-Ovf=   83, TotDurOvf=  152.hrs}
R0079:C00010------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W4             8.60     .656 1979.0616_14:00  383.97 .443     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 239.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W4
# Assumed trench 1.25m wide 0.4 deep, 1693m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 303 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0079:C00011------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W4             8.60     .656 1979.0616_14:00  383.97  n/a     .000
                out <=    5.0 01:W4-LID         3.43     .002 1979.0101_ 1:45  384.08  n/a     .000
           overflow <=    5.0 03:W4-LID-Out     5.17     .647 1979.0616_14:00  383.97  n/a     .000
     {MxStoUsed=.3030E-01  m3, TotOvfVol=.1985E+01  m3, N-Ovf=   78, TotDurOvf=  142.hrs}
R0079:C00012------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:W1             8.92     .680 1979.0616_14:00  383.97  n/a     .000
                    +     5.0 02:W2             8.22     .627 1979.0616_14:00  383.97  n/a     .000
                    +     5.0 02:W3             9.90     .754 1979.0616_14:00  383.97  n/a     .000
                    +     5.0 02:W4             8.60     .656 1979.0616_14:00  383.97  n/a     .000
                 SUM=     5.0 01:BCD-PH3       35.64    2.717 1979.0616_14:00  383.97  n/a     .000
R0079:C00013------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:W1-LID-Out     5.10     .670 1979.0616_14:00  383.97  n/a     .000
                    +     5.0 02:W2-LID-Out     4.60     .618 1979.0616_14:00  383.97  n/a     .000
                    +     5.0 02:W3-LID-Out     6.34     .743 1979.0616_14:00  383.97  n/a     .000
                    +     5.0 02:W4-LID-Out     5.17     .647 1979.0616_14:00  383.97  n/a     .000
                 SUM=     5.0 01:BCD-PH3-LI    21.21    2.678 1979.0616_14:00  383.97  n/a     .000
#****************************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITHOUT INFILTRATION)  - POST DEVELOPMENT CONDITIONS
#****************************************************************************************************************
#                  Set infiltration to 0 (CN = 99.99) for water balance analysis
#****************************************************************************************************************
R0079:C00014------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W1         8.92     .856 1979.0616_14:00  604.35 .697     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 244.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0079:C00015------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W2         8.22     .790 1979.0616_14:00  604.35 .697     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 234.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0079:C00016------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W3         9.90     .940 1979.0616_14:00  604.35 .697     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 257.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0079:C00017------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W4         8.60     .826 1979.0616_14:00  604.35 .697     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 239.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0079:C00018------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:INF-W1         8.92     .856 1979.0616_14:00  604.35  n/a     .000
                    +     5.0 02:INF-W2         8.22     .790 1979.0616_14:00  604.35  n/a     .000
                    +     5.0 02:INF-W3         9.90     .940 1979.0616_14:00  604.35  n/a     .000
                    +     5.0 02:INF-W4         8.60     .826 1979.0616_14:00  604.35  n/a     .000
                 SUM=     5.0 01:INF-BCD-PH    35.64    3.411 1979.0616_14:00  604.35  n/a     .000
################################################################################
# CONTINUOUS RAINFALL DATA
################################################################################
  ** END OF RUN :   79

****************************************************************************************************
 RUN#:COMMAND#
R0080:C00001----------------------------------------------------------------------------------------
     START
      [TZERO =    .00 hrs on 19800101]
      [METOUT=   2    (1=imperial, 2=metric output)]
      [NSTORM=   0 ]
      [NRUN  = 0080 ]
#****************************************************************************************************************
#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
#****************************************************************************************************************
#  Project Name: Barrhaven Conservancy Development
#  Project Number: 1474
#  Date         : 2021/Oct/18
#  Modeller     : J.Burnett, P.Eng.
#  Company      : J.F. Sabourin and Associates
#  License #    : 2582634
#****************************************************************************************************************
# Ottawa International Airport (1967 - 2003)
R0080:C00002----------------------------------------------------------------------------------------
  *  READ AES DATA
      [Filename  = YOW_1967_2007.123                                          ]
      [Start_date= 1980.0101: End_date= 1980.1230]
      {DT= 60.min: Length= 8760.hrs: WetHrs=  427: DryHrs= 8333: PTOT= 622.00}
      Maximum average rainfall intensities over
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
       15.00     9.20     6.50     4.72     3.57     1.97     1.35     1.01      .86    mm/hr
       15.00    18.40    19.50    28.30    42.80    47.20    48.60    48.60    62.00    mm
      19800830 19800830 19801025 19801025 19801026 19801026 19801026 19801027 19800902  date
      Number of rainfall events per following interevent time
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         151      125      112       93       79       62       49       44       28
      Number of events with at least the following durations
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         150       85       54       16        4        0        0        0        0
R0080:C00003----------------------------------------------------------------------------------------
     COMPUTE API
      [APIini= 50.00: APIkdy= .9000: APIkdt= .9956]
      {APImax= 68.72: APIavg= 17.50: APImin=   .06}
#****************************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITH INFILTRATION)  - POST DEVELOPMENT CONDITIONS
#****************************************************************************************************************
R0080:C00004------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
 *  CONTINUOUS STANDHYD   5.0 01:W1             8.92     .198 1980.0830_14:00  255.07 .410     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 244.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W1
# Assumed trench 1.25m wide 0.4 deep, 1991m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 344 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0080:C00005------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W1             8.92     .198 1980.0830_14:00  255.07  n/a     .000
                out <=    5.0 01:W1-LID         4.93     .002 1980.0111_23:40  255.07  n/a     .000
           overflow <=    5.0 03:W1-LID-Out     3.99     .196 1980.0830_14:00  255.07  n/a     .000
     {MxStoUsed=.3440E-01  m3, TotOvfVol=.1017E+01  m3, N-Ovf=   75, TotDurOvf=   99.hrs}
R0080:C00006------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
 *  CONTINUOUS STANDHYD   5.0 01:W2             8.22     .183 1980.0830_14:00  255.07 .410     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 234.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W2
# Assumed trench 1.25m wide 0.4 deep, 1896m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 330 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0080:C00007------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W2             8.22     .183 1980.0830_14:00  255.07  n/a     .000
                out <=    5.0 01:W2-LID         4.67     .002 1980.0111_23:55  255.07  n/a     .000
           overflow <=    5.0 03:W2-LID-Out     3.55     .180 1980.0830_14:00  255.07  n/a     .000
     {MxStoUsed=.3300E-01  m3, TotOvfVol=.9061E+00  m3, N-Ovf=   71, TotDurOvf=   95.hrs}
R0080:C00008------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
 *  CONTINUOUS STANDHYD   5.0 01:W3             9.90     .220 1980.0830_14:00  255.07 .410     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 257.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W3
# Assumed trench 1.25m wide 0.4 deep, 1693m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 303 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0080:C00009------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W3             9.90     .220 1980.0830_14:00  255.07  n/a     .000
                out <=    5.0 01:W3-LID         4.60     .002 1980.0111_ 4:05  255.13  n/a     .000
           overflow <=    5.0 03:W3-LID-Out     5.30     .217 1980.0830_14:00  255.07  n/a     .000
     {MxStoUsed=.3029E-01  m3, TotOvfVol=.1352E+01  m3, N-Ovf=   81, TotDurOvf=  116.hrs}
R0080:C00010------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
 *  CONTINUOUS STANDHYD   5.0 01:W4             8.60     .191 1980.0830_14:00  255.07 .410     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 239.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W4
# Assumed trench 1.25m wide 0.4 deep, 1693m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 303 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0080:C00011------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W4             8.60     .191 1980.0830_14:00  255.07  n/a     .000
                out <=    5.0 01:W4-LID         4.43     .002 1980.0111_ 4:05  255.13  n/a     .000
           overflow <=    5.0 03:W4-LID-Out     4.17     .189 1980.0830_14:00  255.07  n/a     .000
     {MxStoUsed=.3030E-01  m3, TotOvfVol=.1064E+01  m3, N-Ovf=   75, TotDurOvf=  106.hrs}
R0080:C00012------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:W1             8.92     .198 1980.0830_14:00  255.07  n/a     .000
                    +     5.0 02:W2             8.22     .183 1980.0830_14:00  255.07  n/a     .000
                    +     5.0 02:W3             9.90     .220 1980.0830_14:00  255.07  n/a     .000
                    +     5.0 02:W4             8.60     .191 1980.0830_14:00  255.07  n/a     .000
                 SUM=     5.0 01:BCD-PH3       35.64     .792 1980.0830_14:00  255.07  n/a     .000
R0080:C00013------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:W1-LID-Out     3.99     .196 1980.0830_14:00  255.07  n/a     .000
                    +     5.0 02:W2-LID-Out     3.55     .180 1980.0830_14:00  255.07  n/a     .000
                    +     5.0 02:W3-LID-Out     5.30     .217 1980.0830_14:00  255.07  n/a     .000
                    +     5.0 02:W4-LID-Out     4.17     .189 1980.0830_14:00  255.07  n/a     .000
                 SUM=     5.0 01:BCD-PH3-LI    17.01     .782 1980.0830_14:00  255.07  n/a     .000
#****************************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITHOUT INFILTRATION)  - POST DEVELOPMENT CONDITIONS
#****************************************************************************************************************
#                  Set infiltration to 0 (CN = 99.99) for water balance analysis
#****************************************************************************************************************
R0080:C00014------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W1         8.92     .288 1980.0830_14:00  393.13 .632     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 244.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0080:C00015------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W2         8.22     .266 1980.0830_14:00  393.13 .632     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 234.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0080:C00016------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W3         9.90     .319 1980.0830_14:00  393.13 .632     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 257.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0080:C00017------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W4         8.60     .278 1980.0830_14:00  393.13 .632     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 239.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0080:C00018------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:INF-W1         8.92     .288 1980.0830_14:00  393.13  n/a     .000
                    +     5.0 02:INF-W2         8.22     .266 1980.0830_14:00  393.13  n/a     .000
                    +     5.0 02:INF-W3         9.90     .319 1980.0830_14:00  393.13  n/a     .000
                    +     5.0 02:INF-W4         8.60     .278 1980.0830_14:00  393.13  n/a     .000
                 SUM=     5.0 01:INF-BCD-PH    35.64    1.151 1980.0830_14:00  393.13  n/a     .000
################################################################################
# CONTINUOUS RAINFALL DATA
################################################################################
  ** END OF RUN :   80

****************************************************************************************************
 RUN#:COMMAND#
R0081:C00001----------------------------------------------------------------------------------------
     START
      [TZERO =    .00 hrs on 19810101]
      [METOUT=   2    (1=imperial, 2=metric output)]
      [NSTORM=   0 ]
      [NRUN  = 0081 ]
#****************************************************************************************************************
#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
#****************************************************************************************************************
#  Project Name: Barrhaven Conservancy Development
#  Project Number: 1474
#  Date         : 2021/Oct/18
#  Modeller     : J.Burnett, P.Eng.
#  Company      : J.F. Sabourin and Associates
#  License #    : 2582634
#****************************************************************************************************************
# Ottawa International Airport (1967 - 2003)
R0081:C00002----------------------------------------------------------------------------------------
  *  READ AES DATA
      [Filename  = YOW_1967_2007.123                                          ]
      [Start_date= 1981.0101: End_date= 1981.1231]
      {DT= 60.min: Length= 8760.hrs: WetHrs=  641: DryHrs= 8119: PTOT= 936.40}
      Maximum average rainfall intensities over
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
       35.30    31.85    26.20    18.15     9.27     4.83     3.22     2.41     1.62    mm/hr
       35.30    63.70    78.60   108.90   111.30   115.90   115.90   115.90   116.70    mm
      19810805 19810805 19810805 19810805 19810805 19810805 19810806 19810806 19810805  date
      Number of rainfall events per following interevent time
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         226      171      136      109       83       68       59       47       30
      Number of events with at least the following durations
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         225      128       79       28        7        0        0        0        0
R0081:C00003----------------------------------------------------------------------------------------
     COMPUTE API
      [APIini= 50.00: APIkdy= .9000: APIkdt= .9956]
      {APImax=123.49: APIavg= 25.69: APImin=   .26}
#****************************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITH INFILTRATION)  - POST DEVELOPMENT CONDITIONS
#****************************************************************************************************************
R0081:C00004------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W1             8.92     .749 1981.0805_ 2:00  416.15 .444     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 244.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W1
# Assumed trench 1.25m wide 0.4 deep, 1991m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 344 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0081:C00005------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W1             8.92     .749 1981.0805_ 2:00  416.15  n/a     .000
                out <=    5.0 01:W1-LID         4.05     .002 1981.0211_10:05  416.15  n/a     .000
           overflow <=    5.0 03:W1-LID-Out     4.87     .746 1981.0805_ 2:00  416.15  n/a     .000
     {MxStoUsed=.3440E-01  m3, TotOvfVol=.2025E+01  m3, N-Ovf=   70, TotDurOvf=  119.hrs}
R0081:C00006------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W2             8.22     .691 1981.0805_ 2:00  416.15 .444     .000
```

```
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 234.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W2
# Assumed trench 1.25m wide 0.4 deep, 1896m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 330 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0081:C00007------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W2             8.22     .691 1981.0805_ 2:00  416.15  n/a     .000
                out <=    5.0 01:W2-LID         3.82     .002 1981.0211_10:10  416.15  n/a     .000
           overflow <=    5.0 03:W2-LID-Out     4.40     .688 1981.0805_ 2:00  416.15  n/a     .000
     {MxStoUsed=.3299E-01  m3, TotOvfVol=.1832E+01  m3, N-Ovf=   56, TotDurOvf=  116.hrs}
R0081:C00008------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W3             9.90     .831 1981.0805_ 2:00  416.15 .444     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 257.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W3
# Assumed trench 1.25m wide 0.4 deep, 1693m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 303 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0081:C00009------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W3             9.90     .831 1981.0805_ 2:00  416.15  n/a     .000
                out <=    5.0 01:W3-LID         3.87     .002 1981.0202_ 6:00  416.28  n/a     .000
           overflow <=    5.0 03:W3-LID-Out     6.03     .828 1981.0805_ 2:00  416.15  n/a     .000
     {MxStoUsed=.3029E-01  m3, TotOvfVol=.2509E+01  m3, N-Ovf=   83, TotDurOvf=  143.hrs}
R0081:C00010------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W4             8.60     .723 1981.0805_ 2:00  416.15 .444     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 239.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W4
# Assumed trench 1.25m wide 0.4 deep, 1693m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 303 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0081:C00011------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W4             8.60     .723 1981.0805_ 2:00  416.15  n/a     .000
                out <=    5.0 01:W4-LID         3.69     .002 1981.0202_ 6:00  416.27  n/a     .000
           overflow <=    5.0 03:W4-LID-Out     4.91     .720 1981.0805_ 2:00  416.15  n/a     .000
     {MxStoUsed=.3030E-01  m3, TotOvfVol=.2045E+01  m3, N-Ovf=   74, TotDurOvf=  128.hrs}
R0081:C00012------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:W1             8.92     .749 1981.0805_ 2:00  416.15  n/a     .000
                  +       5.0 02:W2             8.22     .691 1981.0805_ 2:00  416.15  n/a     .000
                  +       5.0 02:W3             9.90     .831 1981.0805_ 2:00  416.15  n/a     .000
                  +       5.0 02:W4             8.60     .723 1981.0805_ 2:00  416.15  n/a     .000
               SUM=       5.0 01:BCD-PH3       35.64    2.994 1981.0805_ 2:00  416.15  n/a     .000
R0081:C00013------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:W1-LID-Out     4.87     .746 1981.0805_ 2:00  416.15  n/a     .000
                  +       5.0 02:W2-LID-Out     4.40     .688 1981.0805_ 2:00  416.15  n/a     .000
                  +       5.0 02:W3-LID-Out     6.03     .828 1981.0805_ 2:00  416.15  n/a     .000
                  +       5.0 02:W4-LID-Out     4.91     .720 1981.0805_ 2:00  416.15  n/a     .000
               SUM=       5.0 01:BCD-PH3-LI    20.21    2.983 1981.0805_ 2:00  416.15  n/a     .000
#****************************************************************************************************
#                    Barrhaven Conservancy Development Phase 3 (WITHOUT INFILTRATION)  - POST DEVELOPMENT CONDITIONS
#****************************************************************************************************
#                    Set infiltration to 0 (CN = 99.99) for water balance analysis
#****************************************************************************************************
R0081:C00014------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W1         8.92     .876 1981.0805_ 2:00  632.43 .675     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 244.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0081:C00015------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W2         8.22     .809 1981.0805_ 2:00  632.43 .675     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 234.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0081:C00016------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W3         9.90     .972 1981.0805_ 2:00  632.43 .675     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 257.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0081:C00017------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W4         8.60     .844 1981.0805_ 2:00  632.43 .675     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 239.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0081:C00018------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:INF-W1         8.92     .876 1981.0805_ 2:00  632.43  n/a     .000
                  +       5.0 02:INF-W2         8.22     .809 1981.0805_ 2:00  632.43  n/a     .000
                  +       5.0 02:INF-W3         9.90     .972 1981.0805_ 2:00  632.43  n/a     .000
                  +       5.0 02:INF-W4         8.60     .844 1981.0805_ 2:00  632.43  n/a     .000
               SUM=       5.0 01:INF-BCD-PH    35.64    3.500 1981.0805_ 2:00  632.43  n/a     .000
################################################################################
# CONTINUOUS RAINFALL DATA
################################################################################
  ** END OF RUN :   81

*********************************************************************************************

 RUN#:COMMAND#
R0082:C00001---------------------------------------------------------------------------------
     START
      [TZERO =    .00 hrs on 19820101]
      [METOUT=   2    (1=imperial, 2=metric output)]
      [NSTORM=   0 ]
      [NRUN  = 0082 ]
#****************************************************************************************************
#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
#****************************************************************************************************
#  Project Name: Barrhaven Conservancy Development
#  Project Number: 1474
#  Date         : 2021/Oct/18
#  Modeller     : J.Burnett, P.Eng.
#  Company      : J.F. Sabourin and Associates
#  License #    : 2582634
#****************************************************************************************************
# Ottawa International Airport (1967 - 2003)
R0082:C00002---------------------------------------------------------------------------------
  *  READ AES DATA
      [Filename  = YOW_1967_2007.123                                          ]
      [Start_date= 1982.0101: End_date= 1982.1231]
      {DT= 60.min: Length= 8760.hrs: WetHrs=  436: DryHrs= 8324: PTOT= 596.10}
      Maximum average rainfall intensities over
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
       19.80    10.75     7.60     5.83     3.36     1.68     1.12      .96      .80    mm/hr
       19.80    21.50    22.80    35.00    40.30    40.30    40.30    46.30    57.30    mm
      19820801 19820901 19820825 19820825 19820825 19820826 19820826 19820825 19820825  date
      Number of rainfall events per following interevent time
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         134      110       98       78       66       57       48       41       33
      Number of events with at least the following durations
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         133       81       58       18        4        1        1        0        0
R0082:C00003---------------------------------------------------------------------------------
     COMPUTE API
      [APIini= 50.00: APIkdy= .9000: APIkdt= .9956]
      {APImax= 56.66: APIavg= 16.78: APImin=   .03}
#****************************************************************************************************
#                    Barrhaven Conservancy Development Phase 3 (WITH INFILTRATION)  - POST DEVELOPMENT CONDITIONS
#****************************************************************************************************
R0082:C00004------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W1             8.92     .264 1982.0801_19:00  246.57 .414     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 244.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W1
# Assumed trench 1.25m wide 0.4 deep, 1991m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 344 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0082:C00005------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W1             8.92     .264 1982.0801_19:00  246.58  n/a     .000
                out <=    5.0 01:W1-LID         5.52     .002 1982.0331_19:45  246.58  n/a     .000
           overflow <=    5.0 03:W1-LID-Out     3.40     .261 1982.0801_19:00  246.58  n/a     .000
     {MxStoUsed=.3437E-01  m3, TotOvfVol=.8392E+00  m3, N-Ovf=   58, TotDurOvf=   98.hrs}
R0082:C00006------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W2             8.22     .243 1982.0801_19:00  246.57 .414     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 234.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W2
# Assumed trench 1.25m wide 0.4 deep, 1896m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 330 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0082:C00007------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W2             8.22     .243 1982.0801_19:00  246.57  n/a     .000
                out <=    5.0 01:W2-LID         5.21     .002 1982.0331_19:45  246.58  n/a     .000
           overflow <=    5.0 03:W2-LID-Out     3.01     .241 1982.0801_19:00  246.57  n/a     .000
     {MxStoUsed=.3299E-01  m3, TotOvfVol=.7418E+00  m3, N-Ovf=   54, TotDurOvf=   95.hrs}
R0082:C00008------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W3             9.90     .292 1982.0801_19:00  246.57 .414     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 257.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W3
# Assumed trench 1.25m wide 0.4 deep, 1693m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 303 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0082:C00009------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W3             9.90     .292 1982.0801_19:00  246.57  n/a     .000
                out <=    5.0 01:W3-LID         5.19     .002 1982.0311_20:25  246.64  n/a     .000
           overflow <=    5.0 03:W3-LID-Out     4.71     .290 1982.0801_19:00  246.57  n/a     .000
     {MxStoUsed=.3030E-01  m3, TotOvfVol=.1161E+01  m3, N-Ovf=   65, TotDurOvf=  119.hrs}
R0082:C00010------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W4             8.60     .254 1982.0801_19:00  246.57 .414     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 239.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W4
# Assumed trench 1.25m wide 0.4 deep, 1693m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 303 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0082:C00011------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W4             8.60     .254 1982.0801_19:00  246.57  n/a     .000
                out <=    5.0 01:W4-LID         4.99     .002 1982.0311_20:30  246.64  n/a     .000
           overflow <=    5.0 03:W4-LID-Out     3.61     .252 1982.0801_19:00  246.57  n/a     .000
     {MxStoUsed=.3028E-01  m3, TotOvfVol=.8909E+00  m3, N-Ovf=   55, TotDurOvf=  106.hrs}
R0082:C00012------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:W1             8.92     .264 1982.0801_19:00  246.58  n/a     .000
                  +       5.0 02:W2             8.22     .243 1982.0801_19:00  246.57  n/a     .000
                  +       5.0 02:W3             9.90     .292 1982.0801_19:00  246.57  n/a     .000
                  +       5.0 02:W4             8.60     .254 1982.0801_19:00  246.57  n/a     .000
               SUM=       5.0 01:BCD-PH3       35.64    1.053 1982.0801_19:00  246.57  n/a     .000
R0082:C00013------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:W1-LID-Out     3.40     .261 1982.0801_19:00  246.58  n/a     .000
                  +       5.0 02:W2-LID-Out     3.01     .241 1982.0801_19:00  246.57  n/a     .000
                  +       5.0 02:W3-LID-Out     4.71     .290 1982.0801_19:00  246.57  n/a     .000
                  +       5.0 02:W4-LID-Out     3.61     .252 1982.0801_19:00  246.57  n/a     .000
               SUM=       5.0 01:BCD-PH3-LI    14.73    1.043 1982.0801_19:00  246.57  n/a     .000
#****************************************************************************************************
#                    Barrhaven Conservancy Development Phase 3 (WITHOUT INFILTRATION)  - POST DEVELOPMENT CONDITIONS
#****************************************************************************************************
#                    Set infiltration to 0 (CN = 99.99) for water balance analysis
#****************************************************************************************************
R0082:C00014------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W1         8.92     .425 1982.0801_19:00  372.35 .625     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 244.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0082:C00015------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W2         8.22     .393 1982.0801_19:00  372.35 .625     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 234.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0082:C00016------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W3         9.90     .459 1982.0801_19:00  372.35 .625     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 257.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0082:C00017------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W4         8.60     .411 1982.0801_19:00  372.35 .625     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 239.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0082:C00018------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:INF-W1         8.92     .425 1982.0801_19:00  372.35  n/a     .000
                  +       5.0 02:INF-W2         8.22     .393 1982.0801_19:00  372.35  n/a     .000
                  +       5.0 02:INF-W3         9.90     .459 1982.0801_19:00  372.35  n/a     .000
                  +       5.0 02:INF-W4         8.60     .411 1982.0801_19:00  372.35  n/a     .000
               SUM=       5.0 01:INF-BCD-PH    35.64    1.688 1982.0801_19:00  372.35  n/a     .000
################################################################################
# CONTINUOUS RAINFALL DATA
################################################################################
  ** END OF RUN :   82

*********************************************************************************************

 RUN#:COMMAND#
R0083:C00001---------------------------------------------------------------------------------
     START
      [TZERO =    .00 hrs on 19830101]
      [METOUT=   2    (1=imperial, 2=metric output)]
      [NSTORM=   0 ]
      [NRUN  = 0083 ]
#****************************************************************************************************
#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
#****************************************************************************************************
#  Project Name: Barrhaven Conservancy Development
#  Project Number: 1474
#  Date         : 2021/Oct/18
#  Modeller     : J.Burnett, P.Eng.
#  Company      : J.F. Sabourin and Associates
#  License #    : 2582634
#****************************************************************************************************
# Ottawa International Airport (1967 - 2003)
R0083:C00002---------------------------------------------------------------------------------
  *  READ AES DATA
      [Filename  = YOW_1967_2007.123                                          ]
      [Start_date= 1983.0101: End_date= 1983.1231]
      {DT= 60.min: Length= 8760.hrs: WetHrs=  462: DryHrs= 8298: PTOT= 587.50}
      Maximum average rainfall intensities over
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
       10.40     9.70     7.53     5.43     3.18     2.36     1.68     1.32      .92    mm/hr
       10.40    19.40    22.60    32.60    38.20    56.70    60.40    63.20    66.00    mm
      19831004 19830921 19830921 19831005 19831005 19831005 19831005 19831006 19831008  date
      Number of rainfall events per following interevent time
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         143      115      103       85       70       55       50       45       35
      Number of events with at least the following durations
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         142       87       56       28        5        0        0        0        0
R0083:C00003---------------------------------------------------------------------------------
     COMPUTE API
      [APIini= 50.00: APIkdy= .9000: APIkdt= .9956]
      {APImax= 79.86: APIavg= 16.57: APImin=   .05}
#****************************************************************************************************
#                    Barrhaven Conservancy Development Phase 3 (WITH INFILTRATION)  - POST DEVELOPMENT CONDITIONS
#****************************************************************************************************
R0083:C00004------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
  * CONTINUOUS STANDHYD   5.0 01:W1             8.92     .136 1983.1004_21:00  234.31 .399     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 244.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W1
# Assumed trench 1.25m wide 0.4 deep, 1991m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 344 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0083:C00005------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W1             8.92     .136 1983.1004_21:00  234.31  n/a     .000
                out <=    5.0 01:W1-LID         5.44     .002 1983.0319_ 1:00  234.32  n/a     .000
           overflow <=    5.0 03:W1-LID-Out     3.48     .132 1983.1005_15:00  234.31  n/a     .000
     {MxStoUsed=.3438E-01  m3, TotOvfVol=.8152E+00  m3, N-Ovf=   55, TotDurOvf=   94.hrs}
R0083:C00006------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
  * CONTINUOUS STANDHYD   5.0 01:W2             8.22     .125 1983.1004_21:00  234.31 .399     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 234.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W2
# Assumed trench 1.25m wide 0.4 deep, 1896m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 330 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0083:C00007------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W2             8.22     .125 1983.1004_21:00  234.31  n/a     .000
                out <=    5.0 01:W2-LID         5.12     .002 1983.0319_ 1:10  234.31  n/a     .000
           overflow <=    5.0 03:W2-LID-Out     3.10     .122 1983.1005_15:00  234.31  n/a     .000
     {MxStoUsed=.3300E-01  m3, TotOvfVol=.7261E+00  m3, N-Ovf=   56, TotDurOvf=   91.hrs}
R0083:C00008------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
  * CONTINUOUS STANDHYD   5.0 01:W3             9.90     .150 1983.1004_21:00  234.31 .399     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
```

```
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 257.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W3
# Assumed trench 1.25m wide 0.4 deep, 1693m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 303 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0083:C00009------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W3             9.90     .150 1983.1004_21:00  234.31  n/a     .000
                out <=    5.0 01:W3-LID         5.20     .002 1983.0307_ 2:15  234.37  n/a     .000
           overflow <=    5.0 03:W3-LID-Out     4.70     .147 1983.1004_21:00  234.31  n/a     .000
     {MxStoUsed=.3029E-01  m3, TotOvfVol=.1100E+01  m3, N-Ovf=   69, TotDurOvf=  118.hrs}
R0083:C00010------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
 *  CONTINUOUS STANDHYD   5.0 01:W4             8.60     .131 1983.1004_21:00  234.31 .399     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 239.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W4
# Assumed trench 1.25m wide 0.4 deep, 1693m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 303 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0083:C00011------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W4             8.60     .131 1983.1004_21:00  234.31  n/a     .000
                out <=    5.0 01:W4-LID         4.96     .002 1983.0307_ 2:15  234.37  n/a     .000
           overflow <=    5.0 03:W4-LID-Out     3.64     .128 1983.1004_21:00  234.31  n/a     .000
     {MxStoUsed=.3029E-01  m3, TotOvfVol=.8535E+00  m3, N-Ovf=   57, TotDurOvf=  102.hrs}
R0083:C00012------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:W1             8.92     .136 1983.1004_21:00  234.31  n/a     .000
                    +     5.0 02:W2             8.22     .125 1983.1004_21:00  234.31  n/a     .000
                    +     5.0 02:W3             9.90     .150 1983.1004_21:00  234.31  n/a     .000
                    +     5.0 02:W4             8.60     .131 1983.1004_21:00  234.31  n/a     .000
                 SUM=     5.0 01:BCD-PH3       35.64     .542 1983.1004_21:00  234.31  n/a     .000
R0083:C00013------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:W1-LID-Out     3.48     .132 1983.1005_15:00  234.31  n/a     .000
                    +     5.0 02:W2-LID-Out     3.10     .122 1983.1005_15:00  234.31  n/a     .000
                    +     5.0 02:W3-LID-Out     4.70     .147 1983.1004_21:00  234.31  n/a     .000
                    +     5.0 02:W4-LID-Out     3.64     .128 1983.1004_21:00  234.31  n/a     .000
                 SUM=     5.0 01:BCD-PH3-LI    14.92     .529 1983.1005_15:00  234.31  n/a     .000
#****************************************************************************************************
#                   Barrhaven Conservancy Development Phase 3 (WITHOUT INFILTRATION)  - POST DEVELOPMENT CONDITIONS
#****************************************************************************************************
#                   Set infiltration to 0 (CN = 99.99) for water balance analysis
#****************************************************************************************************
R0083:C00014------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W1         8.92     .241 1983.1005_15:00  355.31 .605     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 244.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0083:C00015------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W2         8.22     .222 1983.1005_15:00  355.31 .605     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 234.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0083:C00016------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W3         9.90     .267 1983.1005_15:00  355.31 .605     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 257.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0083:C00017------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W4         8.60     .232 1983.1005_15:00  355.31 .605     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 239.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0083:C00018------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:INF-W1         8.92     .241 1983.1005_15:00  355.31  n/a     .000
                    +     5.0 02:INF-W2         8.22     .222 1983.1005_15:00  355.31  n/a     .000
                    +     5.0 02:INF-W3         9.90     .267 1983.1005_15:00  355.31  n/a     .000
                    +     5.0 02:INF-W4         8.60     .232 1983.1005_15:00  355.31  n/a     .000
                 SUM=     5.0 01:INF-BCD-PH    35.64     .961 1983.1005_15:00  355.31  n/a     .000
################################################################################
# CONTINUOUS RAINFALL DATA
################################################################################
  ** END OF RUN :   83
*****************************************************************************************
 RUN#:COMMAND#
R0084:C00001-------------------------------------------------------------------------------------------
     START
      [TZERO =    .00 hrs on 19840101]
      [METOUT=   2    (1=imperial, 2=metric output)]
      [NSTORM=   0 ]
      [NRUN  = 0084 ]
#****************************************************************************************************
#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
#****************************************************************************************************
#  Project Name: Barrhaven Conservancy Development
#  Project Number: 1474
#  Date         : 2021/Oct/18
#  Modeller     : J.Burnett, P.Eng.
#  Company      : J.F. Sabourin and Associates
#  License #    : 2582634
#****************************************************************************************************
# Ottawa International Airport (1967 - 2003)
R0084:C00002-------------------------------------------------------------------------------------------
  *  READ AES DATA
      [Filename  = YOW_1967_2007.123                                        ]
      [Start_date= 1984.0101: End_date= 1984.1230]
      {DT= 60.min: Length= 8760.hrs: WetHrs=  308: DryHrs= 8452: PTOT= 459.40}
      Maximum average rainfall intensities over
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
       17.80     9.70     7.57     4.33     3.01     1.85     1.58     1.19     1.00    mm/hr
       17.80    19.40    22.70    26.00    36.10    44.30    57.00    57.00    72.20    mm
      19840812 19840812 19840812 19840806 19840812 19840813 19840813 19840814 19840813  date
      Number of rainfall events per following interevent time
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
          98       80       75       63       55       48       40       34       26
      Number of events with at least the following durations
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
          97       58       39       11        3        1        0        0        0
R0084:C00003-------------------------------------------------------------------------------------------
     COMPUTE API
      [APIini= 50.00: APIkdy= .9000: APIkdt= .9956]
      {APImax= 86.83: APIavg= 13.22: APImin=   .00}
#****************************************************************************************************
#                   Barrhaven Conservancy Development Phase 3 (WITH INFILTRATION)  - POST DEVELOPMENT CONDITIONS
#****************************************************************************************************
R0084:C00004------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W1             8.92     .238 1984.0812_ 7:00  192.84 .420     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 244.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W1
# Assumed trench 1.25m wide 0.4 deep, 1991m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 344 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0084:C00005------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W1             8.92     .238 1984.0812_ 7:00  192.84  n/a     .000
                out <=    5.0 01:W1-LID         4.64     .002 1984.0214_12:50  192.84  n/a     .000
           overflow <=    5.0 03:W1-LID-Out     4.28     .235 1984.0812_ 7:00  192.84  n/a     .000
     {MxStoUsed=.3440E-01  m3, TotOvfVol=.8251E+00  m3, N-Ovf=   54, TotDurOvf=   80.hrs}
R0084:C00006------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W2             8.22     .220 1984.0812_ 7:00  192.84 .420     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 234.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W2
# Assumed trench 1.25m wide 0.4 deep, 1896m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 330 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0084:C00007------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W2             8.22     .220 1984.0812_ 7:00  192.84  n/a     .000
                out <=    5.0 01:W2-LID         4.39     .002 1984.0214_13:10  192.84  n/a     .000
           overflow <=    5.0 03:W2-LID-Out     3.83     .217 1984.0812_ 7:00  192.84  n/a     .000
     {MxStoUsed=.3300E-01  m3, TotOvfVol=.7383E+00  m3, N-Ovf=   60, TotDurOvf=   78.hrs}
R0084:C00008------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W3             9.90     .264 1984.0812_ 7:00  192.84 .420     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 257.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W3
# Assumed trench 1.25m wide 0.4 deep, 1693m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 303 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0084:C00009------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W3             9.90     .264 1984.0812_ 7:00  192.84  n/a     .000
                out <=    5.0 01:W3-LID         4.28     .002 1984.0214_ 7:25  192.87  n/a     .000
           overflow <=    5.0 03:W3-LID-Out     5.62     .262 1984.0812_ 7:00  192.84  n/a     .000
     {MxStoUsed=.3030E-01  m3, TotOvfVol=.1084E+01  m3, N-Ovf=   67, TotDurOvf=   99.hrs}
R0084:C00010------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W4             8.60     .230 1984.0812_ 7:00  192.84 .420     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 239.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W4
# Assumed trench 1.25m wide 0.4 deep, 1693m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 303 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0084:C00011------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W4             8.60     .230 1984.0812_ 7:00  192.84  n/a     .000
                out <=    5.0 01:W4-LID         4.15     .002 1984.0214_ 7:25  192.87  n/a     .000
           overflow <=    5.0 03:W4-LID-Out     4.45     .227 1984.0812_ 7:00  192.84  n/a     .000
     {MxStoUsed=.3028E-01  m3, TotOvfVol=.8572E+00  m3, N-Ovf=   57, TotDurOvf=   87.hrs}
R0084:C00012------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:W1             8.92     .238 1984.0812_ 7:00  192.84  n/a     .000
                    +     5.0 02:W2             8.22     .220 1984.0812_ 7:00  192.84  n/a     .000
                    +     5.0 02:W3             9.90     .264 1984.0812_ 7:00  192.84  n/a     .000
                    +     5.0 02:W4             8.60     .230 1984.0812_ 7:00  192.84  n/a     .000
                 SUM=     5.0 01:BCD-PH3       35.64     .951 1984.0812_ 7:00  192.84  n/a     .000
R0084:C00013------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:W1-LID-Out     4.28     .235 1984.0812_ 7:00  192.84  n/a     .000
                    +     5.0 02:W2-LID-Out     3.83     .217 1984.0812_ 7:00  192.84  n/a     .000
                    +     5.0 02:W3-LID-Out     5.62     .262 1984.0812_ 7:00  192.84  n/a     .000
                    +     5.0 02:W4-LID-Out     4.45     .227 1984.0812_ 7:00  192.84  n/a     .000
                 SUM=     5.0 01:BCD-PH3-LI    18.17     .941 1984.0812_ 7:00  192.84  n/a     .000
#****************************************************************************************************
#                   Barrhaven Conservancy Development Phase 3 (WITHOUT INFILTRATION)  - POST DEVELOPMENT CONDITIONS
#****************************************************************************************************
#                   Set infiltration to 0 (CN = 99.99) for water balance analysis
#****************************************************************************************************
R0084:C00014------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W1         8.92     .407 1984.0812_ 7:00  303.36 .660     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 244.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0084:C00015------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W2         8.22     .376 1984.0812_ 7:00  303.36 .660     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 234.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0084:C00016------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W3         9.90     .451 1984.0812_ 7:00  303.36 .660     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 257.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0084:C00017------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W4         8.60     .393 1984.0812_ 7:00  303.36 .660     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 239.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0084:C00018------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:INF-W1         8.92     .407 1984.0812_ 7:00  303.36  n/a     .000
                    +     5.0 02:INF-W2         8.22     .376 1984.0812_ 7:00  303.36  n/a     .000
                    +     5.0 02:INF-W3         9.90     .451 1984.0812_ 7:00  303.36  n/a     .000
                    +     5.0 02:INF-W4         8.60     .393 1984.0812_ 7:00  303.36  n/a     .000
                 SUM=     5.0 01:INF-BCD-PH    35.64    1.626 1984.0812_ 7:00  303.36  n/a     .000
################################################################################
# CONTINUOUS RAINFALL DATA
################################################################################
  ** END OF RUN :   84
*****************************************************************************************
 RUN#:COMMAND#
R0085:C00001-------------------------------------------------------------------------------------------
     START
      [TZERO =    .00 hrs on 19850101]
      [METOUT=   2    (1=imperial, 2=metric output)]
      [NSTORM=   0 ]
      [NRUN  = 0085 ]
#****************************************************************************************************
#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
#****************************************************************************************************
#  Project Name: Barrhaven Conservancy Development
#  Project Number: 1474
#  Date         : 2021/Oct/18
#  Modeller     : J.Burnett, P.Eng.
#  Company      : J.F. Sabourin and Associates
#  License #    : 2582634
#****************************************************************************************************
# Ottawa International Airport (1967 - 2003)
R0085:C00002-------------------------------------------------------------------------------------------
  *  READ AES DATA
      [Filename  = YOW_1967_2007.123                                        ]
      [Start_date= 1985.0101: End_date= 1985.1231]
      {DT= 60.min: Length= 8760.hrs: WetHrs=  354: DryHrs= 8406: PTOT= 559.90}
      Maximum average rainfall intensities over
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
       19.00    13.60    11.73     6.60     3.30     1.65     1.11      .89      .60    mm/hr
       19.00    27.20    35.20    39.60    39.60    39.60    40.10    42.80    43.40    mm
      19850716 19850617 19850617 19850618 19850618 19850618 19850618 19850827 19850827  date
      Number of rainfall events per following interevent time
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         108       88       84       74       69       56       49       43       32
      Number of events with at least the following durations
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         107       70       43       13        4        1        0        0        0
R0085:C00003-------------------------------------------------------------------------------------------
     COMPUTE API
      [APIini= 50.00: APIkdy= .9000: APIkdt= .9956]
      {APImax= 57.29: APIavg= 15.86: APImin=   .20}
#****************************************************************************************************
#                   Barrhaven Conservancy Development Phase 3 (WITH INFILTRATION)  - POST DEVELOPMENT CONDITIONS
#****************************************************************************************************
R0085:C00004------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W1             8.92     .253 1985.0716_14:00  241.84 .432     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 244.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W1
# Assumed trench 1.25m wide 0.4 deep, 1991m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 344 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0085:C00005------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W1             8.92     .253 1985.0716_14:00  241.84  n/a     .000
                out <=    5.0 01:W1-LID         4.45     .002 1985.0223_18:15  241.84  n/a     .000
           overflow <=    5.0 03:W1-LID-Out     4.47     .250 1985.0716_14:00  241.84  n/a     .000
     {MxStoUsed=.3440E-01  m3, TotOvfVol=.1082E+01  m3, N-Ovf=   62, TotDurOvf=  100.hrs}
R0085:C00006------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W2             8.22     .233 1985.0716_14:00  241.84 .432     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 234.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W2
# Assumed trench 1.25m wide 0.4 deep, 1896m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 330 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0085:C00007------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W2             8.22     .233 1985.0716_14:00  241.84  n/a     .000
                out <=    5.0 01:W2-LID         4.23     .002 1985.0223_18:30  241.84  n/a     .000
           overflow <=    5.0 03:W2-LID-Out     3.99     .231 1985.0716_14:00  241.84  n/a     .000
     {MxStoUsed=.3297E-01  m3, TotOvfVol=.9657E+00  m3, N-Ovf=   63, TotDurOvf=   98.hrs}
R0085:C00008------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W3             9.90     .280 1985.0716_14:00  241.84 .432     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 257.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W3
# Assumed trench 1.25m wide 0.4 deep, 1693m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 303 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0085:C00009------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W3             9.90     .280 1985.0716_14:00  241.84  n/a     .000
                out <=    5.0 01:W3-LID         4.08     .002 1985.0222_ 7:10  241.89  n/a     .000
           overflow <=    5.0 03:W3-LID-Out     5.82     .278 1985.0716_14:00  241.84  n/a     .000
     {MxStoUsed=.3028E-01  m3, TotOvfVol=.1407E+01  m3, N-Ovf=   63, TotDurOvf=  111.hrs}
R0085:C00010------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W4             8.60     .244 1985.0716_14:00  241.84 .432     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 239.:MNI=.013:SCI=   .0]
```

```
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W4
# Assumed trench 1.25m wide 0.4 deep, 1693m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 303 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0085:C00011------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W4             8.60     .244 1985.0716_14:00  241.84  n/a     .000
                out <=    5.0 01:W4-LID         3.97     .002 1985.0222_ 7:10  241.89  n/a     .000
           overflow <=    5.0 03:W4-LID-Out     4.63     .242 1985.0716_14:00  241.84  n/a     .000
     {MxStoUsed=.3030E-01  m3, TotOvfVol=.1120E+01  m3, N-Ovf=   61, TotDurOvf=  105.hrs}
R0085:C00012------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:W1             8.92     .253 1985.0716_14:00  241.84  n/a     .000
                    +     5.0 02:W2             8.22     .233 1985.0716_14:00  241.84  n/a     .000
                    +     5.0 02:W3             9.90     .280 1985.0716_14:00  241.84  n/a     .000
                    +     5.0 02:W4             8.60     .244 1985.0716_14:00  241.84  n/a     .000
                 SUM=     5.0 01:BCD-PH3       35.64    1.010 1985.0716_14:00  241.84  n/a     .000
R0085:C00013------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:W1-LID-Out     4.47     .250 1985.0716_14:00  241.84  n/a     .000
                    +     5.0 02:W2-LID-Out     3.99     .231 1985.0716_14:00  241.84  n/a     .000
                    +     5.0 02:W3-LID-Out     5.82     .278 1985.0716_14:00  241.84  n/a     .000
                    +     5.0 02:W4-LID-Out     4.63     .242 1985.0716_14:00  241.84  n/a     .000
                 SUM=     5.0 01:BCD-PH3-LI    18.92    1.001 1985.0716_14:00  241.84  n/a     .000
#***************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITHOUT INFILTRATION)  - POST DEVELOPMENT CONDITIONS
#***************************************************************************************************
#                  Set infiltration to 0 (CN = 99.99) for water balance analysis
#***************************************************************************************************
R0085:C00014------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W1         8.92     .400 1985.0716_14:00  379.24 .677     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 244.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0085:C00015------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W2         8.22     .379 1985.0716_14:00  379.24 .677     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 234.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0085:C00016------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W3         9.90     .443 1985.0716_14:00  379.24 .677     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 257.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0085:C00017------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W4         8.60     .396 1985.0716_14:00  379.24 .677     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 239.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0085:C00018------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:INF-W1         8.92     .400 1985.0716_14:00  379.24  n/a     .000
                    +     5.0 02:INF-W2         8.22     .379 1985.0716_14:00  379.24  n/a     .000
                    +     5.0 02:INF-W3         9.90     .443 1985.0716_14:00  379.24  n/a     .000
                    +     5.0 02:INF-W4         8.60     .396 1985.0716_14:00  379.24  n/a     .000
                 SUM=     5.0 01:INF-BCD-PH    35.64    1.618 1985.0716_14:00  379.24  n/a     .000
################################################################################
# CONTINUOUS RAINFALL DATA
################################################################################
  ** END OF RUN :   85

*****************************************************************************************
 RUN#:COMMAND#
R0086:C00001-----------------------------------------------------------------------------------
     START
      [TZERO =    .00 hrs on 19860101]
      [METOUT=   2    (1=imperial, 2=metric output)]
      [NSTORM=   0 ]
      [NRUN  = 0086 ]
#***************************************************************************************************
#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
#***************************************************************************************************
#  Project Name: Barrhaven Conservancy Development
#  Project Number: 1474
#  Date         : 2021/Oct/18
#  Modeller     : J.Burnett, P.Eng.
#  Company      : J.F. Sabourin and Associates
#  License #    : 2582634
#***************************************************************************************************
# Ottawa International Airport (1967 - 2003)
R0086:C00002-----------------------------------------------------------------------------------
  *  READ AES DATA
      [Filename  = YOW_1967_2007.123                                               ]
      [Start_date= 1986.0101: End_date= 1986.1231]
      {DT= 60.min: Length= 8040.hrs: WetHrs=  520: DryHrs= 7520: PTOT= 849.40}
      Maximum average rainfall intensities over
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
       18.30    17.80    13.57     7.07     4.84     2.89     2.42     1.85     1.31    mm/hr
       18.30    35.60    40.70    42.40    58.10    69.30    87.00    88.60    94.40    mm
      19860729 19860729 19860729 19860729 19860912 19860912 19860912 19860912 19860913  date
      Number of rainfall events per following interevent time
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         178      144      131      104       80       63       53       48       33
      Number of events with at least the following durations
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         177      104       76       24        2        0        0        0        0
R0086:C00003-----------------------------------------------------------------------------------
     COMPUTE API
      [APIini= 50.00: APIkdy= .9000: APIkdt= .9956]
      {APImax=102.23: APIavg= 25.30: APImin=   .17}
#***************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITH INFILTRATION)  - POST DEVELOPMENT CONDITIONS
#***************************************************************************************************
R0086:C00004------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W1             8.92     .302 1986.0729_15:00  363.48 .428     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 244.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W1
# Assumed trench 1.25m wide 0.4 deep, 1991m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 344 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0086:C00005------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W1             8.92     .302 1986.0729_15:00  363.47  n/a     .000
                out <=    5.0 01:W1-LID         4.28     .002 1986.0120_10:15  363.48  n/a     .000
           overflow <=    5.0 03:W1-LID-Out     4.64     .297 1986.0729_15:00  363.47  n/a     .000
     {MxStoUsed=.3439E-01  m3, TotOvfVol=.1686E+01  m3, N-Ovf=   98, TotDurOvf=  116.hrs}
R0086:C00006------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W2             8.22     .278 1986.0729_15:00  363.47 .428     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 234.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W2
# Assumed trench 1.25m wide 0.4 deep, 1896m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 330 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0086:C00007------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W2             8.22     .278 1986.0729_15:00  363.47  n/a     .000
                out <=    5.0 01:W2-LID         4.04     .002 1986.0120_10:30  363.48  n/a     .000
           overflow <=    5.0 03:W2-LID-Out     4.18     .274 1986.0729_15:00  363.47  n/a     .000
     {MxStoUsed=.3299E-01  m3, TotOvfVol=.1519E+01  m3, N-Ovf=   90, TotDurOvf=  111.hrs}
R0086:C00008------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W3             9.90     .335 1986.0729_15:00  363.47 .428     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 257.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W3
# Assumed trench 1.25m wide 0.4 deep, 1693m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 303 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0086:C00009------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W3             9.90     .335 1986.0729_15:00  363.47  n/a     .000
                out <=    5.0 01:W3-LID         3.99     .002 1986.0119_14:10  363.58  n/a     .000
           overflow <=    5.0 03:W3-LID-Out     5.91     .330 1986.0729_15:00  363.47  n/a     .000
     {MxStoUsed=.3029E-01  m3, TotOvfVol=.2146E+01  m3, N-Ovf=  113, TotDurOvf=  138.hrs}
R0086:C00010------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W4             8.60     .291 1986.0729_15:00  363.47 .428     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 239.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W4
# Assumed trench 1.25m wide 0.4 deep, 1693m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 303 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0086:C00011------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W4             8.60     .291 1986.0729_15:00  363.47  n/a     .000
                out <=    5.0 01:W4-LID         3.85     .002 1986.0119_14:10  363.58  n/a     .000
           overflow <=    5.0 03:W4-LID-Out     4.75     .287 1986.0729_15:00  363.47  n/a     .000
     {MxStoUsed=.3027E-01  m3, TotOvfVol=.1725E+01  m3, N-Ovf=  101, TotDurOvf=  124.hrs}
R0086:C00012------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:W1             8.92     .302 1986.0729_15:00  363.47  n/a     .000
                    +     5.0 02:W2             8.22     .278 1986.0729_15:00  363.47  n/a     .000
                    +     5.0 02:W3             9.90     .335 1986.0729_15:00  363.47  n/a     .000
                    +     5.0 02:W4             8.60     .291 1986.0729_15:00  363.47  n/a     .000
                 SUM=     5.0 01:BCD-PH3       35.64    1.206 1986.0729_15:00  363.48  n/a     .000
R0086:C00013------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:W1-LID-Out     4.64     .297 1986.0729_15:00  363.47  n/a     .000
                    +     5.0 02:W2-LID-Out     4.18     .274 1986.0729_15:00  363.47  n/a     .000
                    +     5.0 02:W3-LID-Out     5.91     .330 1986.0729_15:00  363.47  n/a     .000
                    +     5.0 02:W4-LID-Out     4.75     .287 1986.0729_15:00  363.47  n/a     .000
                 SUM=     5.0 01:BCD-PH3-LI    19.47    1.187 1986.0729_15:00  363.47  n/a     .000
#***************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITHOUT INFILTRATION)  - POST DEVELOPMENT CONDITIONS
#***************************************************************************************************
#                  Set infiltration to 0 (CN = 99.99) for water balance analysis
#***************************************************************************************************
R0086:C00014------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W1         8.92     .449 1986.0729_15:00  579.81 .683     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 244.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0086:C00015------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W2         8.22     .414 1986.0729_15:00  579.81 .683     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 234.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0086:C00016------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W3         9.90     .498 1986.0729_15:00  579.81 .683     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 257.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0086:C00017------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W4         8.60     .433 1986.0729_15:00  579.81 .683     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 239.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0086:C00018------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:INF-W1         8.92     .449 1986.0729_15:00  579.81  n/a     .000
                    +     5.0 02:INF-W2         8.22     .414 1986.0729_15:00  579.81  n/a     .000
                    +     5.0 02:INF-W3         9.90     .498 1986.0729_15:00  579.81  n/a     .000
                    +     5.0 02:INF-W4         8.60     .433 1986.0729_15:00  579.81  n/a     .000
                 SUM=     5.0 01:INF-BCD-PH    35.64    1.795 1986.0729_15:00  579.81  n/a     .000
################################################################################
# CONTINUOUS RAINFALL DATA
################################################################################
  ** END OF RUN :   86

*****************************************************************************************
 RUN#:COMMAND#
R0087:C00001-----------------------------------------------------------------------------------
     START
      [TZERO =    .00 hrs on 19870101]
      [METOUT=   2    (1=imperial, 2=metric output)]
      [NSTORM=   0 ]
      [NRUN  = 0087 ]
#***************************************************************************************************
#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
#***************************************************************************************************
#  Project Name: Barrhaven Conservancy Development
#  Project Number: 1474
#  Date         : 2021/Oct/18
#  Modeller     : J.Burnett, P.Eng.
#  Company      : J.F. Sabourin and Associates
#  License #    : 2582634
#***************************************************************************************************
# Ottawa International Airport (1967 - 2003)
R0087:C00002-----------------------------------------------------------------------------------
  *  READ AES DATA
      [Filename  = YOW_1967_2007.123                                               ]
      [Start_date= 1987.0101: End_date= 1987.1231]
      {DT= 60.min: Length= 7344.hrs: WetHrs=  492: DryHrs= 6852: PTOT= 640.10}
      Maximum average rainfall intensities over
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
       20.00    13.90    14.03     7.05     4.87     2.46     1.84     1.40      .93    mm/hr
       20.00    27.80    42.10    42.30    58.40    59.00    66.40    67.00    67.00    mm
      19870724 19870724 19870724 19870724 19870724 19870725 19870725 19870726 19870726  date
      Number of rainfall events per following interevent time
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         180      147      128       93       74       55       49       41       28
      Number of events with at least the following durations
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         179       94       60       20        3        0        0        0        0
R0087:C00003-----------------------------------------------------------------------------------
     COMPUTE API
      [APIini= 50.00: APIkdy= .9000: APIkdt= .9956]
      {APImax= 75.76: APIavg= 21.41: APImin=  1.18}
#***************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITH INFILTRATION)  - POST DEVELOPMENT CONDITIONS
#***************************************************************************************************
R0087:C00004------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W1             8.92     .267 1987.0724_13:00  254.01 .397     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 244.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W1
# Assumed trench 1.25m wide 0.4 deep, 1991m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 344 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0087:C00005------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W1             8.92     .267 1987.0724_13:00  254.01  n/a     .000
                out <=    5.0 01:W1-LID         5.08     .002 1987.0331_11:25  254.01  n/a     .000
           overflow <=    5.0 03:W1-LID-Out     3.84     .264 1987.0724_13:00  254.01  n/a     .000
     {MxStoUsed=.3440E-01  m3, TotOvfVol=.9757E+00  m3, N-Ovf=   67, TotDurOvf=   80.hrs}
R0087:C00006------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W2             8.22     .246 1987.0724_13:00  254.01 .397     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 234.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W2
# Assumed trench 1.25m wide 0.4 deep, 1896m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 330 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0087:C00007------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W2             8.22     .246 1987.0724_13:00  254.01  n/a     .000
                out <=    5.0 01:W2-LID         4.79     .002 1987.0331_11:55  254.01  n/a     .000
           overflow <=    5.0 03:W2-LID-Out     3.43     .243 1987.0724_13:00  254.01  n/a     .000
     {MxStoUsed=.3299E-01  m3, TotOvfVol=.8723E+00  m3, N-Ovf=   66, TotDurOvf=   77.hrs}
R0087:C00008------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W3             9.90     .296 1987.0724_13:00  254.01 .397     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 257.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W3
# Assumed trench 1.25m wide 0.4 deep, 1693m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 303 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0087:C00009------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W3             9.90     .296 1987.0724_13:00  254.01  n/a     .000
                out <=    5.0 01:W3-LID         4.84     .002 1987.0325_23:20  254.07  n/a     .000
           overflow <=    5.0 03:W3-LID-Out     5.06     .293 1987.0724_13:00  254.01  n/a     .000
     {MxStoUsed=.3029E-01  m3, TotOvfVol=.1286E+01  m3, N-Ovf=   77, TotDurOvf=  104.hrs}
R0087:C00010------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W4             8.60     .257 1987.0724_13:00  254.01 .397     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 239.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W4
# Assumed trench 1.25m wide 0.4 deep, 1693m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 303 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0087:C00011------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W4             8.60     .257 1987.0724_13:00  254.00  n/a     .000
                out <=    5.0 01:W4-LID         4.62     .002 1987.0325_23:20  254.07  n/a     .000
           overflow <=    5.0 03:W4-LID-Out     3.98     .255 1987.0724_13:00  254.00  n/a     .000
     {MxStoUsed=.3030E-01  m3, TotOvfVol=.1012E+01  m3, N-Ovf=   70, TotDurOvf=   88.hrs}
R0087:C00012------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:W1             8.92     .267 1987.0724_13:00  254.01  n/a     .000
                    +     5.0 02:W2             8.22     .246 1987.0724_13:00  254.01  n/a     .000
                    +     5.0 02:W3             9.90     .296 1987.0724_13:00  254.01  n/a     .000
                    +     5.0 02:W4             8.60     .257 1987.0724_13:00  254.00  n/a     .000
                 SUM=     5.0 01:BCD-PH3       35.64    1.065 1987.0724_13:00  254.01  n/a     .000
R0087:C00013------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:W1-LID-Out     3.84     .264 1987.0724_13:00  254.01  n/a     .000
```

```
                 +     5.0 02:W2-LID-Out     3.43     .243 1987.0724_13:00  254.01  n/a     .000
                 +     5.0 02:W3-LID-Out     5.06     .293 1987.0724_13:00  254.01  n/a     .000
                 +     5.0 02:W4-LID-Out     3.98     .255 1987.0724_13:00  254.00  n/a     .000
              SUM=     5.0 01:BCD-PH3-LI    16.32    1.055 1987.0724_13:00  254.01  n/a     .000
#****************************************************************************************************************
#                   Barrhaven Conservancy Development Phase 3 (WITHOUT INFILTRATION)  - POST DEVELOPMENT CONDITIONS
#****************************************************************************************************************
#                   Set infiltration to 0 (CN = 99.99) for water balance analysis
#****************************************************************************************************************
R0087:C00014------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W1         8.92     .430 1987.0724_13:00  383.53 .599     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 244.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0087:C00015------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W2         8.22     .397 1987.0724_13:00  383.53 .599     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 234.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0087:C00016------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W3         9.90     .476 1987.0724_13:00  383.53 .599     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 257.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0087:C00017------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W4         8.60     .415 1987.0724_13:00  383.53 .599     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 239.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0087:C00018------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:INF-W1         8.92     .430 1987.0724_13:00  383.53  n/a     .000
                 +     5.0 02:INF-W2         8.22     .397 1987.0724_13:00  383.53  n/a     .000
                 +     5.0 02:INF-W3         9.90     .476 1987.0724_13:00  383.53  n/a     .000
                 +     5.0 02:INF-W4         8.60     .415 1987.0724_13:00  383.53  n/a     .000
              SUM=     5.0 01:INF-BCD-PH    35.64    1.719 1987.0724_13:00  383.53  n/a     .000
################################################################################
# CONTINUOUS RAINFALL DATA
################################################################################
  ** END OF RUN :   87

****************************************************************************************************

 RUN#:COMMAND#
R0088:C00001----------------------------------------------------------------------------------------
     START
      [TZERO =    .00 hrs on 19880101]
      [METOUT=   2    (1=imperial, 2=metric output)]
      [NSTORM=   0 ]
      [NRUN  = 0088 ]
#****************************************************************************************************************
#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
#****************************************************************************************************************
#  Project Name: Barrhaven Conservancy Development
#  Project Number: 1474
#  Date         : 2021/Oct/18
#  Modeller     : J.Burnett, P.Eng.
#  Company      : J.F. Sabourin and Associates
#  License #    : 2582634
#****************************************************************************************************************
# Ottawa International Airport (1967 - 2003)
R0088:C00002----------------------------------------------------------------------------------------
  *  READ AES DATA
      [Filename  = YOW_1967_2007.123                                            ]
      [Start_date= 1988.0101: End_date= 1988.1230]
      {DT= 60.min: Length= 8760.hrs: WetHrs=  487: DryHrs= 8273: PTOT= 643.80}
      Maximum average rainfall intensities over
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
       25.50    18.20    12.77     7.37     3.78     1.91     1.27      .95      .94    mm/hr
       25.50    36.40    38.30    44.20    45.40    45.80    45.80    45.80    67.40    mm
      19880917 19880726 19880625 19880625 19880625 19880625 19880625 19880626 19880625  date
      Number of rainfall events per following interevent time
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         165      130      109       80       66       56       49       42       26
      Number of events with at least the following durations
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         164      102       71       20        5        0        0        0        0
R0088:C00003----------------------------------------------------------------------------------------
     COMPUTE API
      [APIini= 50.00: APIkdy= .9000: APIkdt= .9956]
      {APImax= 66.04: APIavg= 18.06: APImin=   .03}
#****************************************************************************************************************
#                   Barrhaven Conservancy Development Phase 3 (WITH INFILTRATION)  - POST DEVELOPMENT CONDITIONS
#****************************************************************************************************************
R0088:C00004------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W1             8.92     .368 1988.0917_19:00  261.22 .406     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 244.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W1
# Assumed trench 1.25m wide 0.4 deep, 1991m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 344 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0088:C00005------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W1             8.92     .368 1988.0917_19:00  261.22  n/a     .000
                out <=    5.0 01:W1-LID         4.80     .002 1988.0325_23:50  261.22  n/a     .000
           overflow <=    5.0 03:W1-LID-Out     4.12     .360 1988.0917_19:00  261.22  n/a     .000
     {MxStoUsed=.3439E-01  m3, TotOvfVol=.1076E+01  m3, N-Ovf=   51, TotDurOvf=   75.hrs}
R0088:C00006------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W2             8.22     .340 1988.0917_19:00  261.22 .406     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 234.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W2
# Assumed trench 1.25m wide 0.4 deep, 1896m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 330 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0088:C00007------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W2             8.22     .340 1988.0917_19:00  261.22  n/a     .000
                out <=    5.0 01:W2-LID         4.51     .002 1988.0326_ 0:00  261.22  n/a     .000
           overflow <=    5.0 03:W2-LID-Out     3.71     .332 1988.0917_19:00  261.22  n/a     .000
     {MxStoUsed=.3298E-01  m3, TotOvfVol=.9700E+00  m3, N-Ovf=   46, TotDurOvf=   73.hrs}
R0088:C00008------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W3             9.90     .408 1988.0917_19:00  261.22 .406     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 257.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W3
# Assumed trench 1.25m wide 0.4 deep, 1693m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 303 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0088:C00009------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W3             9.90     .408 1988.0917_19:00  261.22  n/a     .000
                out <=    5.0 01:W3-LID         4.66     .002 1988.0117_18:00  261.29  n/a     .000
           overflow <=    5.0 03:W3-LID-Out     5.24     .400 1988.0917_19:00  261.22  n/a     .000
     {MxStoUsed=.3028E-01  m3, TotOvfVol=.1368E+01  m3, N-Ovf=   68, TotDurOvf=   95.hrs}
R0088:C00010------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W4             8.60     .355 1988.0917_19:00  261.22 .406     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 239.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W4
# Assumed trench 1.25m wide 0.4 deep, 1693m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 303 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0088:C00011------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W4             8.60     .355 1988.0917_19:00  261.22  n/a     .000
                out <=    5.0 01:W4-LID         4.39     .002 1988.0117_18:00  261.28  n/a     .000
           overflow <=    5.0 03:W4-LID-Out     4.21     .347 1988.0917_19:00  261.22  n/a     .000
     {MxStoUsed=.3028E-01  m3, TotOvfVol=.1100E+01  m3, N-Ovf=   49, TotDurOvf=   83.hrs}
R0088:C00012------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:W1             8.92     .368 1988.0917_19:00  261.22  n/a     .000
                 +     5.0 02:W2             8.22     .340 1988.0917_19:00  261.22  n/a     .000
                 +     5.0 02:W3             9.90     .408 1988.0917_19:00  261.22  n/a     .000
                 +     5.0 02:W4             8.60     .355 1988.0917_19:00  261.22  n/a     .000
              SUM=     5.0 01:BCD-PH3       35.64    1.471 1988.0917_19:00  261.22  n/a     .000
R0088:C00013------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:W1-LID-Out     4.12     .360 1988.0917_19:00  261.22  n/a     .000
                 +     5.0 02:W2-LID-Out     3.71     .332 1988.0917_19:00  261.22  n/a     .000
                 +     5.0 02:W3-LID-Out     5.24     .400 1988.0917_19:00  261.22  n/a     .000
                 +     5.0 02:W4-LID-Out     4.21     .347 1988.0917_19:00  261.22  n/a     .000
              SUM=     5.0 01:BCD-PH3-LI    17.28    1.439 1988.0917_19:00  261.22  n/a     .000
#****************************************************************************************************************
#                   Barrhaven Conservancy Development Phase 3 (WITHOUT INFILTRATION)  - POST DEVELOPMENT CONDITIONS
#****************************************************************************************************************
#                   Set infiltration to 0 (CN = 99.99) for water balance analysis
#****************************************************************************************************************
R0088:C00014------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W1         8.92     .574 1988.0726_13:00  390.26 .606     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 244.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0088:C00015------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W2         8.22     .530 1988.0726_13:00  390.26 .606     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 234.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0088:C00016------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W3         9.90     .635 1988.0726_13:00  390.26 .606     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 257.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0088:C00017------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W4         8.60     .554 1988.0726_13:00  390.26 .606     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 239.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0088:C00018------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:INF-W1         8.92     .574 1988.0726_13:00  390.26  n/a     .000
                 +     5.0 02:INF-W2         8.22     .530 1988.0726_13:00  390.26  n/a     .000
                 +     5.0 02:INF-W3         9.90     .635 1988.0726_13:00  390.26  n/a     .000
                 +     5.0 02:INF-W4         8.60     .554 1988.0726_13:00  390.26  n/a     .000
              SUM=     5.0 01:INF-BCD-PH    35.64    2.292 1988.0726_13:00  390.26  n/a     .000
################################################################################
# CONTINUOUS RAINFALL DATA
################################################################################
  ** END OF RUN :   88

****************************************************************************************************

 RUN#:COMMAND#
R0089:C00001----------------------------------------------------------------------------------------
     START
      [TZERO =    .00 hrs on 19890101]
      [METOUT=   2    (1=imperial, 2=metric output)]
      [NSTORM=   0 ]
      [NRUN  = 0089 ]
#****************************************************************************************************************
#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
#****************************************************************************************************************
#  Project Name: Barrhaven Conservancy Development
#  Project Number: 1474
#  Date         : 2021/Oct/18
#  Modeller     : J.Burnett, P.Eng.
#  Company      : J.F. Sabourin and Associates
#  License #    : 2582634
#****************************************************************************************************************
# Ottawa International Airport (1967 - 2003)
R0089:C00002----------------------------------------------------------------------------------------
  *  READ AES DATA
      [Filename  = YOW_1967_2007.123                                            ]
      [Start_date= 1989.0101: End_date= 1989.1231]
      {DT= 60.min: Length= 8040.hrs: WetHrs=  422: DryHrs= 7618: PTOT= 523.20}
      Maximum average rainfall intensities over
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
       22.70    12.60     8.93     5.75     3.03     1.69     1.14      .86      .59    mm/hr
       22.70    25.20    26.80    34.50    36.30    40.60    40.90    41.30    42.50    mm
      19890727 19890727 19890727 19890727 19890727 19891020 19891021 19891021 19891022  date
      Number of rainfall events per following interevent time
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         151      125      108       89       67       53       42       37       29
      Number of events with at least the following durations
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         150       81       52       19        5        0        0        0        0
R0089:C00003----------------------------------------------------------------------------------------
     COMPUTE API
      [APIini= 50.00: APIkdy= .9000: APIkdt= .9956]
      {APImax= 55.10: APIavg= 16.03: APImin=   .02}
#****************************************************************************************************************
#                   Barrhaven Conservancy Development Phase 3 (WITH INFILTRATION)  - POST DEVELOPMENT CONDITIONS
#****************************************************************************************************************
R0089:C00004------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W1             8.92     .317 1989.0727_15:00  207.94 .397     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 244.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W1
# Assumed trench 1.25m wide 0.4 deep, 1991m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 344 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0089:C00005------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W1             8.92     .317 1989.0727_15:00  207.94  n/a     .000
                out <=    5.0 01:W1-LID         5.34     .002 1989.0502_13:10  207.94  n/a     .000
           overflow <=    5.0 03:W1-LID-Out     3.58     .311 1989.0727_15:00  207.94  n/a     .000
     {MxStoUsed=.3440E-01  m3, TotOvfVol=.7440E+00  m3, N-Ovf=   52, TotDurOvf=   85.hrs}
R0089:C00006------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W2             8.22     .292 1989.0727_15:00  207.94 .397     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 234.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W2
# Assumed trench 1.25m wide 0.4 deep, 1896m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 330 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0089:C00007------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W2             8.22     .292 1989.0727_15:00  207.94  n/a     .000
                out <=    5.0 01:W2-LID         5.04     .002 1989.0502_13:35  207.94  n/a     .000
           overflow <=    5.0 03:W2-LID-Out     3.18     .287 1989.0727_15:00  207.94  n/a     .000
     {MxStoUsed=.3297E-01  m3, TotOvfVol=.6621E+00  m3, N-Ovf=   44, TotDurOvf=   82.hrs}
R0089:C00008------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W3             9.90     .351 1989.0727_15:00  207.94 .397     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 257.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W3
# Assumed trench 1.25m wide 0.4 deep, 1693m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 303 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0089:C00009------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W3             9.90     .351 1989.0727_15:00  207.94  n/a     .000
                out <=    5.0 01:W3-LID         5.03     .002 1989.0325_10:55  207.99  n/a     .000
           overflow <=    5.0 03:W3-LID-Out     4.87     .346 1989.0727_15:00  207.94  n/a     .000
     {MxStoUsed=.3029E-01  m3, TotOvfVol=.1012E+01  m3, N-Ovf=   62, TotDurOvf=  107.hrs}
R0089:C00010------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W4             8.60     .306 1989.0727_15:00  207.94 .397     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 239.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W4
# Assumed trench 1.25m wide 0.4 deep, 1693m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 303 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0089:C00011------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W4             8.60     .306 1989.0727_15:00  207.94  n/a     .000
                out <=    5.0 01:W4-LID         4.84     .002 1989.0325_10:55  207.99  n/a     .000
           overflow <=    5.0 03:W4-LID-Out     3.76     .301 1989.0727_15:00  207.94  n/a     .000
     {MxStoUsed=.3028E-01  m3, TotOvfVol=.7826E+00  m3, N-Ovf=   53, TotDurOvf=   96.hrs}
R0089:C00012------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:W1             8.92     .317 1989.0727_15:00  207.94  n/a     .000
                 +     5.0 02:W2             8.22     .292 1989.0727_15:00  207.94  n/a     .000
                 +     5.0 02:W3             9.90     .351 1989.0727_15:00  207.94  n/a     .000
                 +     5.0 02:W4             8.60     .306 1989.0727_15:00  207.94  n/a     .000
              SUM=     5.0 01:BCD-PH3       35.64    1.266 1989.0727_15:00  207.94  n/a     .000
R0089:C00013------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:W1-LID-Out     3.58     .311 1989.0727_15:00  207.94  n/a     .000
                 +     5.0 02:W2-LID-Out     3.18     .287 1989.0727_15:00  207.94  n/a     .000
                 +     5.0 02:W3-LID-Out     4.87     .346 1989.0727_15:00  207.94  n/a     .000
                 +     5.0 02:W4-LID-Out     3.76     .301 1989.0727_15:00  207.94  n/a     .000
              SUM=     5.0 01:BCD-PH3-LI    15.39    1.245 1989.0727_15:00  207.94  n/a     .000
#****************************************************************************************************************
#                   Barrhaven Conservancy Development Phase 3 (WITHOUT INFILTRATION)  - POST DEVELOPMENT CONDITIONS
#****************************************************************************************************************
#                   Set infiltration to 0 (CN = 99.99) for water balance analysis
#****************************************************************************************************************
R0089:C00014------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W1         8.92     .530 1989.0727_15:00  314.66 .601     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 244.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0089:C00015------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
```

```
    CONTINUOUS STANDHYD   5.0 01:INF-W2         8.22     .489 1989.0727_15:00  314.66 .601     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 234.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0089:C00016------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W3         9.90     .587 1989.0727_15:00  314.66 .601     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 257.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0089:C00017------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W4         8.60     .511 1989.0727_15:00  314.66 .601     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 239.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0089:C00018------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:INF-W1         8.92     .530 1989.0727_15:00  314.66  n/a     .000
                    +     5.0 02:INF-W2         8.22     .489 1989.0727_15:00  314.66  n/a     .000
                    +     5.0 02:INF-W3         9.90     .587 1989.0727_15:00  314.66  n/a     .000
                    +     5.0 02:INF-W4         8.60     .511 1989.0727_15:00  314.66  n/a     .000
                 SUM=     5.0 01:INF-BCD-PH    35.64    2.118 1989.0727_15:00  314.66  n/a     .000
################################################################################
# CONTINUOUS RAINFALL DATA
################################################################################
  ** END OF RUN :   89

****************************************************************************************************





 RUN#:COMMAND#
R0090:C00001----------------------------------------------------------------------------------------
     START
      [TZERO =    .00 hrs on 19900101]
      [METOUT=   2    (1=imperial, 2=metric output)]
      [NSTORM=   0 ]
      [NRUN  = 0090 ]
#*****************************************************************************************************************************
#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
#*****************************************************************************************************************************
#  Project Name: Barrhaven Conservancy Development
#  Project Number: 1474
#  Date         : 2021/Oct/18
#  Modeller     : J.Burnett, P.Eng.
#  Company      : J.F. Sabourin and Associates
#  License #    : 2582634
#*****************************************************************************************************************************
# Ottawa International Airport (1967 - 2003)
R0090:C00002----------------------------------------------------------------------------------------
  *  READ AES DATA
      [Filename  = YOW_1967_2007.123                                            ]
      [Start_date= 1990.0101: End_date= 1990.1231]
      {DT= 60.min: Length= 7344.hrs: WetHrs=  618: DryHrs= 6726: PTOT= 727.80}
      Maximum average rainfall intensities over
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
       20.60    12.25     9.60     5.58     4.43     2.25     1.50     1.23     1.06    mm/hr
       20.60    24.50    28.80    33.50    53.20    54.00    54.00    59.00    76.60    mm
      19900720 19900720 19900828 19900828 19900720 19900720 19900720 19900722 19900723  date
      Number of rainfall events per following interevent time
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         204      156      141      107       84       66       56       47       33
      Number of events with at least the following durations
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         203      116       75       31        6        1        0        0        0
R0090:C00003----------------------------------------------------------------------------------------
     COMPUTE API
      [APIini= 50.00: APIkdy= .9000: APIkdt= .9956]
      {APImax= 75.10: APIavg= 23.47: APImin=  3.10}
#*****************************************************************************************************************************
#                 Barrhaven Conservancy Development Phase 3 (WITH INFILTRATION)  - POST DEVELOPMENT CONDITIONS
#*****************************************************************************************************************************
R0090:C00004------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W1             8.92     .291 1990.0720_ 5:00  293.09 .403     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 244.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W1
# Assumed trench 1.25m wide 0.4 deep, 1991m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 344 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0090:C00005------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W1             8.92     .291 1990.0720_ 5:00  293.09  n/a     .000
                out <=    5.0 01:W1-LID         4.88     .002 1990.0403_11:00  293.09  n/a     .000
           overflow <=    5.0 03:W1-LID-Out     4.04     .285 1990.0720_ 5:00  293.09  n/a     .000
     {MxStoUsed=.3440E-01  m3, TotOvfVol=.1183E+01  m3, N-Ovf=   71, TotDurOvf=  132.hrs}
R0090:C00006------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W2             8.22     .268 1990.0720_ 5:00  293.09 .403     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 234.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W2
# Assumed trench 1.25m wide 0.4 deep, 1896m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 330 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0090:C00007------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W2             8.22     .268 1990.0720_ 5:00  293.09  n/a     .000
                out <=    5.0 01:W2-LID         4.60     .002 1990.0403_11:20  293.09  n/a     .000
           overflow <=    5.0 03:W2-LID-Out     3.62     .263 1990.0720_ 5:00  293.09  n/a     .000
     {MxStoUsed=.3300E-01  m3, TotOvfVol=.1060E+01  m3, N-Ovf=   74, TotDurOvf=  128.hrs}
R0090:C00008------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W3             9.90     .322 1990.0720_ 5:00  293.09 .403     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 257.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W3
# Assumed trench 1.25m wide 0.4 deep, 1693m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 303 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0090:C00009------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W3             9.90     .322 1990.0720_ 5:00  293.09  n/a     .000
                out <=    5.0 01:W3-LID         4.64     .002 1990.0312_15:55  293.17  n/a     .000
           overflow <=    5.0 03:W3-LID-Out     5.26     .317 1990.0720_ 5:00  293.09  n/a     .000
     {MxStoUsed=.3029E-01  m3, TotOvfVol=.1541E+01  m3, N-Ovf=   83, TotDurOvf=  153.hrs}
R0090:C00010------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W4             8.60     .280 1990.0720_ 5:00  293.09 .403     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 239.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W4
# Assumed trench 1.25m wide 0.4 deep, 1693m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 303 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0090:C00011------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W4             8.60     .280 1990.0720_ 5:00  293.09  n/a     .000
                out <=    5.0 01:W4-LID         4.41     .002 1990.0312_15:55  293.17  n/a     .000
           overflow <=    5.0 03:W4-LID-Out     4.19     .275 1990.0720_ 5:00  293.09  n/a     .000
     {MxStoUsed=.3030E-01  m3, TotOvfVol=.1227E+01  m3, N-Ovf=   80, TotDurOvf=  140.hrs}
R0090:C00012------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:W1             8.92     .291 1990.0720_ 5:00  293.09  n/a     .000
                    +     5.0 02:W2             8.22     .268 1990.0720_ 5:00  293.09  n/a     .000
                    +     5.0 02:W3             9.90     .322 1990.0720_ 5:00  293.09  n/a     .000
                    +     5.0 02:W4             8.60     .280 1990.0720_ 5:00  293.09  n/a     .000
                 SUM=     5.0 01:BCD-PH3       35.64    1.161 1990.0720_ 5:00  293.09  n/a     .000
R0090:C00013------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:W1-LID-Out     4.04     .285 1990.0720_ 5:00  293.09  n/a     .000
                    +     5.0 02:W2-LID-Out     3.62     .263 1990.0720_ 5:00  293.09  n/a     .000
                    +     5.0 02:W3-LID-Out     5.26     .317 1990.0720_ 5:00  293.09  n/a     .000
                    +     5.0 02:W4-LID-Out     4.19     .275 1990.0720_ 5:00  293.09  n/a     .000
                 SUM=     5.0 01:BCD-PH3-LI    17.10    1.140 1990.0720_ 5:00  293.09  n/a     .000
#*****************************************************************************************************************************
#                 Barrhaven Conservancy Development Phase 3 (WITHOUT INFILTRATION)  - POST DEVELOPMENT CONDITIONS
#*****************************************************************************************************************************
#                 Set infiltration to 0 (CN = 99.99) for water balance analysis
#*****************************************************************************************************************************
R0090:C00014------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W1         8.92     .477 1990.0720_ 5:00  456.65 .627     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 244.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0090:C00015------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W2         8.22     .440 1990.0720_ 5:00  456.65 .627     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 234.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0090:C00016------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W3         9.90     .528 1990.0720_ 5:00  456.64 .627     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 257.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0090:C00017------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W4         8.60     .460 1990.0720_ 5:00  456.65 .627     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 239.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0090:C00018------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:INF-W1         8.92     .477 1990.0720_ 5:00  456.65  n/a     .000
                    +     5.0 02:INF-W2         8.22     .440 1990.0720_ 5:00  456.65  n/a     .000
                    +     5.0 02:INF-W3         9.90     .528 1990.0720_ 5:00  456.65  n/a     .000
                    +     5.0 02:INF-W4         8.60     .460 1990.0720_ 5:00  456.65  n/a     .000
                 SUM=     5.0 01:INF-BCD-PH    35.64    1.904 1990.0720_ 5:00  456.65  n/a     .000
################################################################################
# CONTINUOUS RAINFALL DATA
################################################################################
  ** END OF RUN :   90

****************************************************************************************************





 RUN#:COMMAND#
R0091:C00001----------------------------------------------------------------------------------------
     START
      [TZERO =    .00 hrs on 19910101]
      [METOUT=   2    (1=imperial, 2=metric output)]
      [NSTORM=   0 ]
      [NRUN  = 0091 ]
#*****************************************************************************************************************************
#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
#*****************************************************************************************************************************
#  Project Name: Barrhaven Conservancy Development
#  Project Number: 1474
#  Date         : 2021/Oct/18
#  Modeller     : J.Burnett, P.Eng.
#  Company      : J.F. Sabourin and Associates
#  License #    : 2582634
#*****************************************************************************************************************************
# Ottawa International Airport (1967 - 2003)
R0091:C00002----------------------------------------------------------------------------------------
  *  READ AES DATA
      [Filename  = YOW_1967_2007.123                                            ]
      [Start_date= 1991.0101: End_date= 1991.1231]
      {DT= 60.min: Length= 8040.hrs: WetHrs=  486: DryHrs= 7554: PTOT= 556.00}
      Maximum average rainfall intensities over
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
       11.30     9.90     6.87     4.10     2.53     1.72     1.28     1.08      .79    mm/hr
       11.30    19.80    20.60    24.60    30.40    41.20    46.00    51.60    57.00    mm
      19910409 19910409 19910409 19910409 19911016 19910422 19910410 19910410 19910423  date
      Number of rainfall events per following interevent time
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         165      137      127      102       80       63       52       45       38
      Number of events with at least the following durations
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         164       89       56       21        6        1        0        0        0
R0091:C00003----------------------------------------------------------------------------------------
     COMPUTE API
      [APIini= 50.00: APIkdy= .9000: APIkdt= .9956]
      {APImax= 72.80: APIavg= 16.88: APImin=   .26}
#*****************************************************************************************************************************
#                 Barrhaven Conservancy Development Phase 3 (WITH INFILTRATION)  - POST DEVELOPMENT CONDITIONS
#*****************************************************************************************************************************
R0091:C00004------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
  * CONTINUOUS STANDHYD   5.0 01:W1             8.92     .151 1991.0409_ 1:00  221.62 .399     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 244.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W1
# Assumed trench 1.25m wide 0.4 deep, 1991m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 344 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0091:C00005------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W1             8.92     .151 1991.0409_ 1:00  221.62  n/a     .000
                out <=    5.0 01:W1-LID         5.65     .002 1991.0302_ 7:40  221.62  n/a     .000
           overflow <=    5.0 03:W1-LID-Out     3.27     .148 1991.0409_ 1:00  221.62  n/a     .000
     {MxStoUsed=.3439E-01  m3, TotOvfVol=.7237E+00  m3, N-Ovf=   47, TotDurOvf=   99.hrs}
R0091:C00006------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
  * CONTINUOUS STANDHYD   5.0 01:W2             8.22     .139 1991.0409_ 1:00  221.62 .399     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 234.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W2
# Assumed trench 1.25m wide 0.4 deep, 1896m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 330 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0091:C00007------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W2             8.22     .139 1991.0409_ 1:00  221.62  n/a     .000
                out <=    5.0 01:W2-LID         5.31     .002 1991.0302_ 7:45  221.62  n/a     .000
           overflow <=    5.0 03:W2-LID-Out     2.91     .137 1991.0409_ 1:00  221.62  n/a     .000
     {MxStoUsed=.3300E-01  m3, TotOvfVol=.6452E+00  m3, N-Ovf=   44, TotDurOvf=   96.hrs}
R0091:C00008------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
  * CONTINUOUS STANDHYD   5.0 01:W3             9.90     .167 1991.0409_ 1:00  221.62 .399     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 257.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W3
# Assumed trench 1.25m wide 0.4 deep, 1693m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 303 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0091:C00009------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W3             9.90     .167 1991.0409_ 1:00  221.62  n/a     .000
                out <=    5.0 01:W3-LID         5.54     .002 1991.0302_ 6:00  221.68  n/a     .000
           overflow <=    5.0 03:W3-LID-Out     4.36     .165 1991.0409_ 1:00  221.62  n/a     .000
     {MxStoUsed=.3029E-01  m3, TotOvfVol=.9660E+00  m3, N-Ovf=   50, TotDurOvf=  117.hrs}
R0091:C00010------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
  * CONTINUOUS STANDHYD   5.0 01:W4             8.60     .145 1991.0409_ 1:00  221.62 .399     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 239.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W4
# Assumed trench 1.25m wide 0.4 deep, 1693m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 303 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0091:C00011------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W4             8.60     .145 1991.0409_ 1:00  221.62  n/a     .000
                out <=    5.0 01:W4-LID         5.19     .002 1991.0302_ 6:00  221.67  n/a     .000
           overflow <=    5.0 03:W4-LID-Out     3.41     .143 1991.0409_ 1:00  221.62  n/a     .000
     {MxStoUsed=.3028E-01  m3, TotOvfVol=.7552E+00  m3, N-Ovf=   49, TotDurOvf=  105.hrs}
R0091:C00012------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:W1             8.92     .151 1991.0409_ 1:00  221.62  n/a     .000
                    +     5.0 02:W2             8.22     .139 1991.0409_ 1:00  221.62  n/a     .000
                    +     5.0 02:W3             9.90     .167 1991.0409_ 1:00  221.62  n/a     .000
                    +     5.0 02:W4             8.60     .145 1991.0409_ 1:00  221.62  n/a     .000
                 SUM=     5.0 01:BCD-PH3       35.64     .602 1991.0409_ 1:00  221.62  n/a     .000
R0091:C00013------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:W1-LID-Out     3.27     .148 1991.0409_ 1:00  221.62  n/a     .000
                    +     5.0 02:W2-LID-Out     2.91     .137 1991.0409_ 1:00  221.62  n/a     .000
                    +     5.0 02:W3-LID-Out     4.36     .165 1991.0409_ 1:00  221.62  n/a     .000
                    +     5.0 02:W4-LID-Out     3.41     .143 1991.0409_ 1:00  221.62  n/a     .000
                 SUM=     5.0 01:BCD-PH3-LI    13.94     .594 1991.0409_ 1:00  221.62  n/a     .000
#*****************************************************************************************************************************
#                 Barrhaven Conservancy Development Phase 3 (WITHOUT INFILTRATION)  - POST DEVELOPMENT CONDITIONS
#*****************************************************************************************************************************
#                 Set infiltration to 0 (CN = 99.99) for water balance analysis
#*****************************************************************************************************************************
R0091:C00014------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W1         8.92     .258 1991.0409_ 1:00  331.19 .596     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 244.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0091:C00015------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W2         8.22     .240 1991.0409_ 1:00  331.20 .596     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 234.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0091:C00016------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W3         9.90     .286 1991.0409_ 1:00  331.20 .596     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 257.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0091:C00017------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W4         8.60     .249 1991.0409_ 1:00  331.19 .596     .000
      [XIMP=.54:TIMP=.64]
```

```
        [LOSS= 2 :CN=100.0]
        [Pervious    area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
        [Impervious  area: IAimp= 1.57:SLPI= .50:LGI= 239.:MNI=.013:SCI=   .0]
        [IaRECimp=   1.50: IaRECper=   6.00]
        [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0091:C00018------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD                5.0 02:INF-W1         8.92     .258 1991.0409_ 1:00  331.19  n/a     .000
                      +    5.0 02:INF-W2         8.22     .240 1991.0409_ 1:00  331.20  n/a     .000
                      +    5.0 02:INF-W3         9.90     .286 1991.0409_ 1:00  331.19  n/a     .000
                      +    5.0 02:INF-W4         8.60     .249 1991.0409_ 1:00  331.19  n/a     .000
                   SUM=    5.0 01:INF-BCD-PH    35.64    1.034 1991.0409_ 1:00  331.20  n/a     .000
##################################################################################
# CONTINUOUS RAINFALL DATA
##################################################################################
  ** END OF RUN :   91

****************************************************************************************************

 RUN#:COMMAND#
R0092:C00001----------------------------------------------------------------------------------------
      START
        [TZERO =    .00 hrs on 19920101]
        [METOUT=   2    (1=imperial, 2=metric output)]
        [NSTORM=   0 ]
        [NRUN  = 0092 ]
#*******************************************************************************************************************
#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
#*******************************************************************************************************************
#  Project Name: Barrhaven Conservancy Development
#  Project Number: 1474
#  Date          : 2021/Oct/18
#  Modeller      : J.Burnett, P.Eng.
#  Company       : J.F. Sabourin and Associates
#  License #     : 2582634
#*******************************************************************************************************************
# Ottawa International Airport (1967 - 2003)
R0092:C00002----------------------------------------------------------------------------------------
   *  READ AES DATA
        [Filename  = YOW_1967_2007.123                                                  ]
        [Start_date= 1992.0101: End_date= 1992.1230]
        {DT= 60.min: Length= 8760.hrs: WetHrs=  551: DryHrs= 8209: PTOT= 732.80}
        Maximum average rainfall intensities over
          1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         31.50    18.00    13.30     7.22     4.14     2.26     1.51     1.51     1.02    mm/hr
         31.50    36.00    39.90    43.30    49.70    54.20    54.20    72.60    73.60    mm
        19920804 19920804 19920804 19920804 19920717 19920718 19920718 19920719 19920720  date
        Number of rainfall events per following interevent time
          1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
           190      151      132      100       84       69       55       47       38
        Number of events with at least the following durations
          1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
           189      109       70       22        5        1        0        0        0
R0092:C00003----------------------------------------------------------------------------------------
      COMPUTE API
        [APIini= 50.00: APIkdy= .9000: APIkdt= .9956]
        {APImax= 97.62: APIavg= 20.33: APImin=  1.07}
#*******************************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITH INFILTRATION)  - POST DEVELOPMENT CONDITIONS
#*******************************************************************************************************************
R0092:C00004------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W1             8.92     .574 1992.0804_14:00  308.60 .421     .000
        [XIMP=.54:TIMP=.64]
        [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
        [Pervious    area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
        [Impervious  area: IAimp= 1.57:SLPI= .50:LGI= 244.:MNI=.013:SCI=   .0]
        [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W1
# Assumed trench 1.25m wide 0.4 deep, 1991m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 344 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0092:C00005------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W1             8.92     .574 1992.0804_14:00  308.60  n/a     .000
                out <=    5.0 01:W1-LID         4.53     .002 1992.0114_ 8:55  308.60  n/a     .000
           overflow <=    5.0 03:W1-LID-Out     4.39     .563 1992.0804_14:00  308.60  n/a     .000
      {MxStoUsed=.3439E-01  m3, TotOvfVol=.1355E+01  m3, N-Ovf=   63, TotDurOvf=  100.hrs}
R0092:C00006------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W2             8.22     .530 1992.0804_14:00  308.60 .421     .000
        [XIMP=.54:TIMP=.64]
        [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
        [Pervious    area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
        [Impervious  area: IAimp= 1.57:SLPI= .50:LGI= 234.:MNI=.013:SCI=   .0]
        [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W2
# Assumed trench 1.25m wide 0.4 deep, 1896m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 330 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0092:C00007------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W2             8.22     .530 1992.0804_14:00  308.60  n/a     .000
                out <=    5.0 01:W2-LID         4.27     .002 1992.0114_ 9:00  308.60  n/a     .000
           overflow <=    5.0 03:W2-LID-Out     3.95     .519 1992.0804_14:00  308.60  n/a     .000
      {MxStoUsed=.3300E-01  m3, TotOvfVol=.1218E+01  m3, N-Ovf=   60, TotDurOvf=   95.hrs}
R0092:C00008------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W3             9.90     .636 1992.0804_14:00  308.60 .421     .000
        [XIMP=.54:TIMP=.64]
        [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
        [Pervious    area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
        [Impervious  area: IAimp= 1.57:SLPI= .50:LGI= 257.:MNI=.013:SCI=   .0]
        [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W3
# Assumed trench 1.25m wide 0.4 deep, 1693m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 303 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0092:C00009------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W3             9.90     .636 1992.0804_14:00  308.60  n/a     .000
                out <=    5.0 01:W3-LID         4.32     .002 1992.0104_19:40  308.69  n/a     .000
           overflow <=    5.0 03:W3-LID-Out     5.58     .624 1992.0804_14:00  308.60  n/a     .000
      {MxStoUsed=.3029E-01  m3, TotOvfVol=.1722E+01  m3, N-Ovf=   73, TotDurOvf=  123.hrs}
R0092:C00010------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W4             8.60     .554 1992.0804_14:00  308.60 .421     .000
        [XIMP=.54:TIMP=.64]
        [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
        [Pervious    area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
        [Impervious  area: IAimp= 1.57:SLPI= .50:LGI= 239.:MNI=.013:SCI=   .0]
        [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W4
# Assumed trench 1.25m wide 0.4 deep, 1693m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 303 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0092:C00011------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W4             8.60     .554 1992.0804_14:00  308.60  n/a     .000
                out <=    5.0 01:W4-LID         4.11     .002 1992.0104_19:40  308.69  n/a     .000
           overflow <=    5.0 03:W4-LID-Out     4.49     .543 1992.0804_14:00  308.60  n/a     .000
      {MxStoUsed=.3027E-01  m3, TotOvfVol=.1385E+01  m3, N-Ovf=   64, TotDurOvf=  109.hrs}
R0092:C00012------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:W1             8.92     .574 1992.0804_14:00  308.60  n/a     .000
                     +    5.0 02:W2             8.22     .530 1992.0804_14:00  308.60  n/a     .000
                     +    5.0 02:W3             9.90     .636 1992.0804_14:00  308.60  n/a     .000
                     +    5.0 02:W4             8.60     .554 1992.0804_14:00  308.60  n/a     .000
                  SUM=    5.0 01:BCD-PH3       35.64    2.293 1992.0804_14:00  308.60  n/a     .000
R0092:C00013------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:W1-LID-Out     4.39     .563 1992.0804_14:00  308.60  n/a     .000
                     +    5.0 02:W2-LID-Out     3.95     .519 1992.0804_14:00  308.60  n/a     .000
                     +    5.0 02:W3-LID-Out     5.58     .624 1992.0804_14:00  308.60  n/a     .000
                     +    5.0 02:W4-LID-Out     4.49     .543 1992.0804_14:00  308.60  n/a     .000
                  SUM=    5.0 01:BCD-PH3-LI    18.41    2.249 1992.0804_14:00  308.60  n/a     .000
#*******************************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITHOUT INFILTRATION)  - POST DEVELOPMENT CONDITIONS
#*******************************************************************************************************************
#                  Set infiltration to 0 (CN = 99.99) for water balance analysis
#*******************************************************************************************************************
R0092:C00014------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W1         8.92     .756 1992.0804_14:00  471.31 .643     .000
        [XIMP=.54:TIMP=.64]
        [LOSS= 2 :CN=100.0]
        [Pervious    area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
        [Impervious  area: IAimp= 1.57:SLPI= .50:LGI= 244.:MNI=.013:SCI=   .0]
        [IaRECimp=   1.50: IaRECper=   6.00]
        [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0092:C00015------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W2         8.22     .698 1992.0804_14:00  471.31 .643     .000
        [XIMP=.54:TIMP=.64]
        [LOSS= 2 :CN=100.0]
        [Pervious    area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
        [Impervious  area: IAimp= 1.57:SLPI= .50:LGI= 234.:MNI=.013:SCI=   .0]
        [IaRECimp=   1.50: IaRECper=   6.00]
        [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0092:C00016------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W3         9.90     .838 1992.0804_14:00  471.31 .643     .000
        [XIMP=.54:TIMP=.64]
        [LOSS= 2 :CN=100.0]
        [Pervious    area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
        [Impervious  area: IAimp= 1.57:SLPI= .50:LGI= 257.:MNI=.013:SCI=   .0]
        [IaRECimp=   1.50: IaRECper=   6.00]
        [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0092:C00017------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W4         8.60     .730 1992.0804_14:00  471.31 .643     .000
        [XIMP=.54:TIMP=.64]
        [LOSS= 2 :CN=100.0]
        [Pervious    area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
        [Impervious  area: IAimp= 1.57:SLPI= .50:LGI= 239.:MNI=.013:SCI=   .0]
        [IaRECimp=   1.50: IaRECper=   6.00]
        [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0092:C00018------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:INF-W1         8.92     .756 1992.0804_14:00  471.31  n/a     .000
                     +    5.0 02:INF-W2         8.22     .698 1992.0804_14:00  471.31  n/a     .000
                     +    5.0 02:INF-W3         9.90     .838 1992.0804_14:00  471.31  n/a     .000
                     +    5.0 02:INF-W4         8.60     .730 1992.0804_14:00  471.31  n/a     .000
                  SUM=    5.0 01:INF-BCD-PH    35.64    3.022 1992.0804_14:00  471.31  n/a     .000
##################################################################################
# CONTINUOUS RAINFALL DATA
##################################################################################
  ** END OF RUN :   92

****************************************************************************************************

 RUN#:COMMAND#
R0093:C00001----------------------------------------------------------------------------------------
      START
        [TZERO =    .00 hrs on 19930101]
        [METOUT=   2    (1=imperial, 2=metric output)]
        [NSTORM=   0 ]
        [NRUN  = 0093 ]
#*******************************************************************************************************************
#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
#*******************************************************************************************************************
#  Project Name: Barrhaven Conservancy Development
#  Project Number: 1474
#  Date          : 2021/Oct/18
#  Modeller      : J.Burnett, P.Eng.
#  Company       : J.F. Sabourin and Associates
#  License #     : 2582634
#*******************************************************************************************************************
# Ottawa International Airport (1967 - 2003)
R0093:C00002----------------------------------------------------------------------------------------
   *  READ AES DATA
        [Filename  = YOW_1967_2007.123                                                  ]
        [Start_date= 1993.0101: End_date= 1993.1231]
        {DT= 60.min: Length= 8760.hrs: WetHrs=  585: DryHrs= 8175: PTOT= 721.30}
        Maximum average rainfall intensities over
          1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         12.60     6.60     4.83     3.72     3.58     2.31     1.61     1.21      .81    mm/hr
         12.60    13.20    14.50    22.30    43.00    55.50    58.10    58.10    58.10    mm
        19930703 19930703 19931127 19931128 19931128 19931128 19931128 19931128 19931129  date
        Number of rainfall events per following interevent time
          1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
           191      154      137      111       91       73       57       48       34
        Number of events with at least the following durations
          1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
           190      110       66       27        7        2        0        0        0
R0093:C00003----------------------------------------------------------------------------------------
      COMPUTE API
        [APIini= 50.00: APIkdy= .9000: APIkdt= .9956]
        {APImax= 66.56: APIavg= 20.01: APImin=   .11}
#*******************************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITH INFILTRATION)  - POST DEVELOPMENT CONDITIONS
#*******************************************************************************************************************
R0093:C00004------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
 *  CONTINUOUS STANDHYD   5.0 01:W1             8.92     .166 1993.0703_ 9:00  288.39 .400     .000
        [XIMP=.54:TIMP=.64]
        [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
        [Pervious    area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
        [Impervious  area: IAimp= 1.57:SLPI= .50:LGI= 244.:MNI=.013:SCI=   .0]
        [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W1
# Assumed trench 1.25m wide 0.4 deep, 1991m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 344 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0093:C00005------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W1             8.92     .166 1993.0703_ 9:00  288.39  n/a     .000
                out <=    5.0 01:W1-LID         5.41     .002 1993.0104_14:55  288.40  n/a     .000
           overflow <=    5.0 03:W1-LID-Out     3.51     .163 1993.0703_ 9:00  288.39  n/a     .000
      {MxStoUsed=.3440E-01  m3, TotOvfVol=.1013E+01  m3, N-Ovf=   63, TotDurOvf=  122.hrs}
R0093:C00006------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
 *  CONTINUOUS STANDHYD   5.0 01:W2             8.22     .153 1993.0703_ 9:00  288.39 .400     .000
        [XIMP=.54:TIMP=.64]
        [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
        [Pervious    area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
        [Impervious  area: IAimp= 1.57:SLPI= .50:LGI= 234.:MNI=.013:SCI=   .0]
        [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W2
# Assumed trench 1.25m wide 0.4 deep, 1896m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 330 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0093:C00007------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W2             8.22     .153 1993.0703_ 9:00  288.39  n/a     .000
                out <=    5.0 01:W2-LID         5.09     .002 1993.0104_16:30  288.40  n/a     .000
           overflow <=    5.0 03:W2-LID-Out     3.13     .150 1993.0703_ 9:00  288.39  n/a     .000
      {MxStoUsed=.3297E-01  m3, TotOvfVol=.9016E+00  m3, N-Ovf=   61, TotDurOvf=  118.hrs}
R0093:C00008------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
 *  CONTINUOUS STANDHYD   5.0 01:W3             9.90     .182 1993.0703_ 9:00  288.39 .400     .000
        [XIMP=.54:TIMP=.64]
        [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
        [Pervious    area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
        [Impervious  area: IAimp= 1.57:SLPI= .50:LGI= 257.:MNI=.013:SCI=   .0]
        [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W3
# Assumed trench 1.25m wide 0.4 deep, 1693m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 303 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0093:C00009------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W3             9.90     .182 1993.0703_ 9:00  288.39  n/a     .000
                out <=    5.0 01:W3-LID         5.18     .002 1993.0103_23:05  288.48  n/a     .000
           overflow <=    5.0 03:W3-LID-Out     4.72     .179 1993.0703_ 9:00  288.39  n/a     .000
      {MxStoUsed=.3030E-01  m3, TotOvfVol=.1362E+01  m3, N-Ovf=   85, TotDurOvf=  146.hrs}
R0093:C00010------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
 *  CONTINUOUS STANDHYD   5.0 01:W4             8.60     .160 1993.0703_ 9:00  288.39 .400     .000
        [XIMP=.54:TIMP=.64]
        [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
        [Pervious    area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
        [Impervious  area: IAimp= 1.57:SLPI= .50:LGI= 239.:MNI=.013:SCI=   .0]
        [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W4
# Assumed trench 1.25m wide 0.4 deep, 1693m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 303 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0093:C00011------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W4             8.60     .160 1993.0703_ 9:00  288.39  n/a     .000
                out <=    5.0 01:W4-LID         4.92     .002 1993.0103_23:05  288.47  n/a     .000
           overflow <=    5.0 03:W4-LID-Out     3.68     .157 1993.0703_ 9:00  288.39  n/a     .000
      {MxStoUsed=.3030E-01  m3, TotOvfVol=.1060E+01  m3, N-Ovf=   70, TotDurOvf=  131.hrs}
R0093:C00012------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:W1             8.92     .166 1993.0703_ 9:00  288.39  n/a     .000
                     +    5.0 02:W2             8.22     .153 1993.0703_ 9:00  288.39  n/a     .000
                     +    5.0 02:W3             9.90     .182 1993.0703_ 9:00  288.39  n/a     .000
                     +    5.0 02:W4             8.60     .160 1993.0703_ 9:00  288.39  n/a     .000
                  SUM=    5.0 01:BCD-PH3       35.64     .660 1993.0703_ 9:00  288.39  n/a     .000
R0093:C00013------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:W1-LID-Out     3.51     .163 1993.0703_ 9:00  288.39  n/a     .000
                     +    5.0 02:W2-LID-Out     3.13     .150 1993.0703_ 9:00  288.39  n/a     .000
                     +    5.0 02:W3-LID-Out     4.72     .179 1993.0703_ 9:00  288.39  n/a     .000
                     +    5.0 02:W4-LID-Out     3.68     .157 1993.0703_ 9:00  288.39  n/a     .000
                  SUM=    5.0 01:BCD-PH3-LI    15.04     .649 1993.0703_ 9:00  288.39  n/a     .000
#*******************************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITHOUT INFILTRATION)  - POST DEVELOPMENT CONDITIONS
#*******************************************************************************************************************
#                  Set infiltration to 0 (CN = 99.99) for water balance analysis
#*******************************************************************************************************************
R0093:C00014------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W1         8.92     .224 1993.0703_ 9:00  434.50 .602     .000
        [XIMP=.54:TIMP=.64]
        [LOSS= 2 :CN=100.0]
        [Pervious    area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
        [Impervious  area: IAimp= 1.57:SLPI= .50:LGI= 244.:MNI=.013:SCI=   .0]
        [IaRECimp=   1.50: IaRECper=   6.00]
        [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0093:C00015------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W2         8.22     .214 1993.0703_ 9:00  434.50 .602     .000
        [XIMP=.54:TIMP=.64]
        [LOSS= 2 :CN=100.0]
        [Pervious    area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
        [Impervious  area: IAimp= 1.57:SLPI= .50:LGI= 234.:MNI=.013:SCI=   .0]
        [IaRECimp=   1.50: IaRECper=   6.00]
        [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0093:C00016------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W3         9.90     .247 1993.0703_ 9:00  434.50 .602     .000
        [XIMP=.54:TIMP=.64]
        [LOSS= 2 :CN=100.0]
        [Pervious    area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
        [Impervious  area: IAimp= 1.57:SLPI= .50:LGI= 257.:MNI=.013:SCI=   .0]
        [IaRECimp=   1.50: IaRECper=   6.00]
        [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0093:C00017------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W4         8.60     .224 1993.0703_ 9:00  434.50 .602     .000
        [XIMP=.54:TIMP=.64]
        [LOSS= 2 :CN=100.0]
        [Pervious    area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
        [Impervious  area: IAimp= 1.57:SLPI= .50:LGI= 239.:MNI=.013:SCI=   .0]
        [IaRECimp=   1.50: IaRECper=   6.00]
        [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0093:C00018------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:INF-W1         8.92     .224 1993.0703_ 9:00  434.50  n/a     .000
                     +    5.0 02:INF-W2         8.22     .214 1993.0703_ 9:00  434.50  n/a     .000
                     +    5.0 02:INF-W3         9.90     .247 1993.0703_ 9:00  434.50  n/a     .000
                     +    5.0 02:INF-W4         8.60     .224 1993.0703_ 9:00  434.50  n/a     .000
                  SUM=    5.0 01:INF-BCD-PH    35.64     .909 1993.0703_ 9:00  434.50  n/a     .000
##################################################################################
# CONTINUOUS RAINFALL DATA
##################################################################################
  ** END OF RUN :   93

****************************************************************************************************
```

```
 RUN#:COMMAND#
R0094:C00001----------------------------------------------------------------------------------
     START
      [TZERO =    .00 hrs on 19940101]
      [METOUT=   2    (1=imperial, 2=metric output)]
      [NSTORM=   0 ]
      [NRUN  = 0094 ]
#***************************************************************************************************************
#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
#***************************************************************************************************************
#  Project Name: Barrhaven Conservancy Development
#  Project Number: 1474
#  Date         : 2021/Oct/18
#  Modeller     : J.Burnett, P.Eng.
#  Company      : J.F. Sabourin and Associates
#  License #    : 2582634
#***************************************************************************************************************
# Ottawa International Airport (1967 - 2003)
R0094:C00002----------------------------------------------------------------------------------
  *  READ AES DATA
      [Filename  = YOW_1967_2007.123                                           ]
      [Start_date= 1994.0101: End_date= 1994.1231]
      {DT= 60.min: Length= 8760.hrs: WetHrs=  342: DryHrs= 8418: PTOT= 540.20}
      Maximum average rainfall intensities over
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
       22.60    11.90     8.43     5.42     2.92     1.79     1.19      .89     1.15    mm/hr
       22.60    23.80    25.30    32.50    35.00    42.90    42.90    42.90    82.60    mm
      19940629 19940629 19940627 19940625 19940625 19940625 19940626 19940626 19940627  date
      Number of rainfall events per following interevent time
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         138      115      101       79       62       48       39       34       26
      Number of events with at least the following durations
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         137       72       48       12        1        0        0        0        0
R0094:C00003----------------------------------------------------------------------------------
     COMPUTE API
      [APIini= 50.00: APIkdy= .9000: APIkdt= .9956]
      {APImax= 97.84: APIavg= 15.35: APImin=   .02}
#***************************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITH INFILTRATION)  - POST DEVELOPMENT CONDITIONS
#***************************************************************************************************************
R0094:C00004------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W1              8.92     .305 1994.0629_13:00  219.95 .407     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 244.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W1
# Assumed trench 1.25m wide 0.4 deep, 1991m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 344 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0094:C00005------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W1              8.92     .305 1994.0629_13:00  219.95  n/a     .000
                out <=    5.0 01:W1-LID          4.62     .002 1994.0413_11:25  219.95  n/a     .000
           overflow <=    5.0 03:W1-LID-Out      4.30     .301 1994.0629_13:00  219.95  n/a     .000
     {MxStoUsed=.3438E-01  m3, TotOvfVol=.9462E+00  m3, N-Ovf=   50, TotDurOvf=   60.hrs}
R0094:C00006------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W2              8.22     .281 1994.0629_13:00  219.95 .407     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 234.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W2
# Assumed trench 1.25m wide 0.4 deep, 1896m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 330 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0094:C00007------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W2              8.22     .281 1994.0629_13:00  219.95  n/a     .000
                out <=    5.0 01:W2-LID          4.36     .002 1994.0413_11:35  219.95  n/a     .000
           overflow <=    5.0 03:W2-LID-Out      3.86     .278 1994.0629_13:00  219.95  n/a     .000
     {MxStoUsed=.3297E-01  m3, TotOvfVol=.8493E+00  m3, N-Ovf=   55, TotDurOvf=   58.hrs}
R0094:C00008------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W3              9.90     .338 1994.0629_13:00  219.95 .407     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 257.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W3
# Assumed trench 1.25m wide 0.4 deep, 1693m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 303 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0094:C00009------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W3              9.90     .338 1994.0629_13:00  219.95  n/a     .000
                out <=    5.0 01:W3-LID          4.42     .002 1994.0321_20:35  219.99  n/a     .000
           overflow <=    5.0 03:W3-LID-Out      5.48     .334 1994.0629_13:00  219.95  n/a     .000
     {MxStoUsed=.3030E-01  m3, TotOvfVol=.1205E+01  m3, N-Ovf=   60, TotDurOvf=   70.hrs}
R0094:C00010------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W4              8.60     .294 1994.0629_13:00  219.95 .407     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 239.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W4
# Assumed trench 1.25m wide 0.4 deep, 1693m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 303 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0094:C00011------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W4              8.60     .294 1994.0629_13:00  219.95  n/a     .000
                out <=    5.0 01:W4-LID          4.19     .002 1994.0321_20:35  219.99  n/a     .000
           overflow <=    5.0 03:W4-LID-Out      4.41     .291 1994.0629_13:00  219.95  n/a     .000
     {MxStoUsed=.3029E-01  m3, TotOvfVol=.9694E+00  m3, N-Ovf=   56, TotDurOvf=   65.hrs}
R0094:C00012------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:W1              8.92     .305 1994.0629_13:00  219.95  n/a     .000
                     +    5.0 02:W2              8.22     .281 1994.0629_13:00  219.95  n/a     .000
                     +    5.0 02:W3              9.90     .338 1994.0629_13:00  219.95  n/a     .000
                     +    5.0 02:W4              8.60     .294 1994.0629_13:00  219.95  n/a     .000
                  SUM=    5.0 01:BCD-PH3        35.64    1.217 1994.0629_13:00  219.95  n/a     .000
R0094:C00013------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:W1-LID-Out      4.30     .301 1994.0629_13:00  219.95  n/a     .000
                     +    5.0 02:W2-LID-Out      3.86     .278 1994.0629_13:00  219.95  n/a     .000
                     +    5.0 02:W3-LID-Out      5.48     .334 1994.0629_13:00  219.95  n/a     .000
                     +    5.0 02:W4-LID-Out      4.41     .291 1994.0629_13:00  219.95  n/a     .000
                  SUM=    5.0 01:BCD-PH3-LI     18.05    1.204 1994.0629_13:00  219.95  n/a     .000
#***************************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITHOUT INFILTRATION)  - POST DEVELOPMENT CONDITIONS
#***************************************************************************************************************
#                  Set infiltration to 0 (CN = 99.99) for water balance analysis
#***************************************************************************************************************
R0094:C00014------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W1          8.92     .511 1994.0629_13:00  341.46 .632     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 244.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0094:C00015------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W2          8.22     .472 1994.0629_13:00  341.46 .632     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 234.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0094:C00016------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W3          9.90     .566 1994.0629_13:00  341.46 .632     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 257.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0094:C00017------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W4          8.60     .493 1994.0629_13:00  341.46 .632     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 239.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0094:C00018------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:INF-W1          8.92     .511 1994.0629_13:00  341.46  n/a     .000
                     +    5.0 02:INF-W2          8.22     .472 1994.0629_13:00  341.46  n/a     .000
                     +    5.0 02:INF-W3          9.90     .566 1994.0629_13:00  341.46  n/a     .000
                     +    5.0 02:INF-W4          8.60     .493 1994.0629_13:00  341.46  n/a     .000
                  SUM=    5.0 01:INF-BCD-PH     35.64    2.043 1994.0629_13:00  341.46  n/a     .000
################################################################################
# CONTINUOUS RAINFALL DATA
################################################################################
  ** END OF RUN :   94

**************************************************************************************************

 RUN#:COMMAND#
R0095:C00001----------------------------------------------------------------------------------
     START
      [TZERO =    .00 hrs on 19950101]
      [METOUT=   2    (1=imperial, 2=metric output)]
      [NSTORM=   0 ]
      [NRUN  = 0095 ]
#***************************************************************************************************************
#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
#***************************************************************************************************************
#  Project Name: Barrhaven Conservancy Development
#  Project Number: 1474
#  Date         : 2021/Oct/18
#  Modeller     : J.Burnett, P.Eng.
#  Company      : J.F. Sabourin and Associates
#  License #    : 2582634
#***************************************************************************************************************
# Ottawa International Airport (1967 - 2003)
R0095:C00002----------------------------------------------------------------------------------
  *  READ AES DATA
      [Filename  = YOW_1967_2007.123                                           ]
      [Start_date= 1995.0101: End_date= 1995.1231]
      {DT= 60.min: Length= 8040.hrs: WetHrs=  332: DryHrs= 7708: PTOT= 538.50}
      Maximum average rainfall intensities over
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
       16.90    13.25    11.33     8.98     6.35     3.48     2.95     2.21     1.48    mm/hr
       16.90    26.50    34.00    53.90    76.20    83.40   106.20   106.20   106.20    mm
      19950603 19950603 19951006 19951006 19951006 19951006 19951007 19951007 19951008  date
      Number of rainfall events per following interevent time
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
          91       73       65       55       47       41       34       31       25
      Number of events with at least the following durations
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
          90       54       35       16        7        1        0        0        0
R0095:C00003----------------------------------------------------------------------------------
     COMPUTE API
      [APIini= 50.00: APIkdy= .9000: APIkdt= .9956]
      {APImax= 99.57: APIavg= 16.58: APImin=   .00}
#***************************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITH INFILTRATION)  - POST DEVELOPMENT CONDITIONS
#***************************************************************************************************************
R0095:C00004------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W1              8.92     .243 1995.0603_ 2:00  247.06 .459     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 244.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W1
# Assumed trench 1.25m wide 0.4 deep, 1991m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 344 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0095:C00005------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W1              8.92     .243 1995.0603_ 2:00  247.06  n/a     .000
                out <=    5.0 01:W1-LID          3.32     .002 1995.0113_16:00  247.06  n/a     .000
           overflow <=    5.0 03:W1-LID-Out      5.60     .238 1995.0603_ 2:00  247.06  n/a     .000
     {MxStoUsed=.3440E-01  m3, TotOvfVol=.1384E+01  m3, N-Ovf=   42, TotDurOvf=  111.hrs}
R0095:C00006------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W2              8.22     .227 1995.0603_ 2:00  247.06 .459     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 234.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W2
# Assumed trench 1.25m wide 0.4 deep, 1896m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 330 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0095:C00007------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W2              8.22     .227 1995.0603_ 2:00  247.06  n/a     .000
                out <=    5.0 01:W2-LID          3.15     .002 1995.0113_16:05  247.06  n/a     .000
           overflow <=    5.0 03:W2-LID-Out      5.07     .223 1995.0603_ 2:00  247.06  n/a     .000
     {MxStoUsed=.3298E-01  m3, TotOvfVol=.1254E+01  m3, N-Ovf=   42, TotDurOvf=  108.hrs}
R0095:C00008------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W3              9.90     .269 1995.0603_ 2:00  247.06 .459     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 257.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W3
# Assumed trench 1.25m wide 0.4 deep, 1693m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 303 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0095:C00009------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W3              9.90     .269 1995.0603_ 2:00  247.06  n/a     .000
                out <=    5.0 01:W3-LID          3.06     .002 1995.0113_15:05  247.10  n/a     .000
           overflow <=    5.0 03:W3-LID-Out      6.84     .265 1995.0603_ 2:00  247.06  n/a     .000
     {MxStoUsed=.3028E-01  m3, TotOvfVol=.1689E+01  m3, N-Ovf=   47, TotDurOvf=  127.hrs}
R0095:C00010------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W4              8.60     .234 1995.0603_ 2:00  247.06 .459     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 239.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W4
# Assumed trench 1.25m wide 0.4 deep, 1693m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 303 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0095:C00011------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W4              8.60     .234 1995.0603_ 2:00  247.06  n/a     .000
                out <=    5.0 01:W4-LID          2.98     .002 1995.0113_15:05  247.09  n/a     .000
           overflow <=    5.0 03:W4-LID-Out      5.62     .230 1995.0603_ 2:00  247.06  n/a     .000
     {MxStoUsed=.3028E-01  m3, TotOvfVol=.1390E+01  m3, N-Ovf=   41, TotDurOvf=  117.hrs}
R0095:C00012------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:W1              8.92     .243 1995.0603_ 2:00  247.06  n/a     .000
                     +    5.0 02:W2              8.22     .227 1995.0603_ 2:00  247.06  n/a     .000
                     +    5.0 02:W3              9.90     .269 1995.0603_ 2:00  247.06  n/a     .000
                     +    5.0 02:W4              8.60     .234 1995.0603_ 2:00  247.06  n/a     .000
                  SUM=    5.0 01:BCD-PH3        35.64     .973 1995.0603_ 2:00  247.06  n/a     .000
R0095:C00013------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:W1-LID-Out      5.60     .238 1995.0603_ 2:00  247.06  n/a     .000
                     +    5.0 02:W2-LID-Out      5.07     .223 1995.0603_ 2:00  247.06  n/a     .000
                     +    5.0 02:W3-LID-Out      6.84     .265 1995.0603_ 2:00  247.06  n/a     .000
                     +    5.0 02:W4-LID-Out      5.62     .230 1995.0603_ 2:00  247.06  n/a     .000
                  SUM=    5.0 01:BCD-PH3-LI     23.14     .955 1995.0603_ 2:00  247.06  n/a     .000
#***************************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITHOUT INFILTRATION)  - POST DEVELOPMENT CONDITIONS
#***************************************************************************************************************
#                  Set infiltration to 0 (CN = 99.99) for water balance analysis
#***************************************************************************************************************
R0095:C00014------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W1          8.92     .403 1995.0603_ 2:00  404.90 .752     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 244.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0095:C00015------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W2          8.22     .372 1995.0603_ 2:00  404.90 .752     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 234.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0095:C00016------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W3          9.90     .446 1995.0603_ 2:00  404.90 .752     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 257.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0095:C00017------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W4          8.60     .389 1995.0603_ 2:00  404.90 .752     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 239.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0095:C00018------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:INF-W1          8.92     .403 1995.0603_ 2:00  404.90  n/a     .000
                     +    5.0 02:INF-W2          8.22     .372 1995.0603_ 2:00  404.90  n/a     .000
                     +    5.0 02:INF-W3          9.90     .446 1995.0603_ 2:00  404.90  n/a     .000
                     +    5.0 02:INF-W4          8.60     .389 1995.0603_ 2:00  404.90  n/a     .000
                  SUM=    5.0 01:INF-BCD-PH     35.64    1.609 1995.0603_ 2:00  404.90  n/a     .000
################################################################################
# CONTINUOUS RAINFALL DATA
################################################################################
  ** END OF RUN :   95

**************************************************************************************************

 RUN#:COMMAND#
R0096:C00001----------------------------------------------------------------------------------
     START
      [TZERO =    .00 hrs on 19960101]
      [METOUT=   2    (1=imperial, 2=metric output)]
      [NSTORM=   0 ]
      [NRUN  = 0096 ]
#***************************************************************************************************************
#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
#***************************************************************************************************************
#  Project Name: Barrhaven Conservancy Development
#  Project Number: 1474
#  Date         : 2021/Oct/18
#  Modeller     : J.Burnett, P.Eng.
```

```
#  Company     : J.F. Sabourin and Associates
#  License #   : 2582634
#***************************************************************************************************
# Ottawa International Airport (1967 - 2003)
R0096:C00002-------------------------------------------------------------------------------------
  *  READ AES DATA
      [Filename  = YOW_1967_2007.123                                           ]
      [Start_date= 1996.0101: End_date= 1996.1230]
      {DT= 60.min: Length= 6552.hrs: WetHrs=  387: DryHrs= 6165: PTOT= 512.20}
      Maximum average rainfall intensities over
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
       18.50    13.55     9.03     5.42     2.93     1.84     1.32     1.02      .70    mm/hr
       18.50    27.10    27.10    32.50    35.10    44.10    47.50    49.00    50.30    mm
      19960731 19960731 19960731 19960731 19960731 19961109 19961109 19961109 19961109  date
      Number of rainfall events per following interevent time
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         132      104       93       71       59       43       36       31       24
      Number of events with at least the following durations
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         131       72       50       19        2        1        0        0        0
R0096:C00003-------------------------------------------------------------------------------------
     COMPUTE API
      [APIini= 50.00: APIkdy= .9000: APIkdt= .9956]
      {APImax= 63.22: APIavg= 19.39: APImin=   .71}
#***************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITH INFILTRATION)  - POST DEVELOPMENT CONDITIONS
#***************************************************************************************************
R0096:C00004------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
 *  CONTINUOUS STANDHYD   5.0 01:W1             8.92     .246 1996.0731_15:00  205.13 .400     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 244.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W1
# Assumed trench 1.25m wide 0.4 deep, 1991m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 344 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0096:C00005------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W1             8.92     .246 1996.0731_15:00  205.13  n/a     .000
                out <=    5.0 01:W1-LID         5.40     .002 1996.0420_20:25  205.13  n/a     .000
           overflow <=    5.0 03:W1-LID-Out     3.52     .243 1996.0731_15:00  205.13  n/a     .000
     {MxStoUsed=.3439E-01  m3, TotOvfVol=.7224E+00  m3, N-Ovf=   59, TotDurOvf=   81.hrs}
R0096:C00006------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
 *  CONTINUOUS STANDHYD   5.0 01:W2             8.22     .227 1996.0731_15:00  205.13 .400     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 234.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W2
# Assumed trench 1.25m wide 0.4 deep, 1896m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 330 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0096:C00007------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W2             8.22     .227 1996.0731_15:00  205.13  n/a     .000
                out <=    5.0 01:W2-LID         5.11     .002 1996.0420_20:25  205.13  n/a     .000
           overflow <=    5.0 03:W2-LID-Out     3.11     .224 1996.0731_15:00  205.13  n/a     .000
     {MxStoUsed=.3300E-01  m3, TotOvfVol=.6388E+00  m3, N-Ovf=   56, TotDurOvf=   78.hrs}
R0096:C00008------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
 *  CONTINUOUS STANDHYD   5.0 01:W3             9.90     .272 1996.0731_15:00  205.13 .400     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 257.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W3
# Assumed trench 1.25m wide 0.4 deep, 1693m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 303 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0096:C00009------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W3             9.90     .272 1996.0731_15:00  205.13  n/a     .000
                out <=    5.0 01:W3-LID         5.05     .002 1996.0415_21:35  205.18  n/a     .000
           overflow <=    5.0 03:W3-LID-Out     4.85     .270 1996.0731_15:00  205.13  n/a     .000
     {MxStoUsed=.3029E-01  m3, TotOvfVol=.9948E+00  m3, N-Ovf=   68, TotDurOvf=   98.hrs}
R0096:C00010------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
 *  CONTINUOUS STANDHYD   5.0 01:W4             8.60     .237 1996.0731_15:00  205.13 .400     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 239.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W4
# Assumed trench 1.25m wide 0.4 deep, 1693m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 303 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0096:C00011------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W4             8.60     .237 1996.0731_15:00  205.13  n/a     .000
                out <=    5.0 01:W4-LID         4.86     .002 1996.0415_21:35  205.17  n/a     .000
           overflow <=    5.0 03:W4-LID-Out     3.74     .235 1996.0731_15:00  205.13  n/a     .000
     {MxStoUsed=.3029E-01  m3, TotOvfVol=.7678E+00  m3, N-Ovf=   61, TotDurOvf=   88.hrs}
R0096:C00012------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:W1             8.92     .246 1996.0731_15:00  205.13  n/a     .000
                    +     5.0 02:W2             8.22     .227 1996.0731_15:00  205.13  n/a     .000
                    +     5.0 02:W3             9.90     .272 1996.0731_15:00  205.13  n/a     .000
                    +     5.0 02:W4             8.60     .237 1996.0731_15:00  205.13  n/a     .000
                 SUM=     5.0 01:BCD-PH3       35.64     .982 1996.0731_15:00  205.13  n/a     .000
R0096:C00013------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:W1-LID-Out     3.52     .243 1996.0731_15:00  205.13  n/a     .000
                    +     5.0 02:W2-LID-Out     3.11     .224 1996.0731_15:00  205.13  n/a     .000
                    +     5.0 02:W3-LID-Out     4.85     .270 1996.0731_15:00  205.13  n/a     .000
                    +     5.0 02:W4-LID-Out     3.74     .235 1996.0731_15:00  205.13  n/a     .000
                 SUM=     5.0 01:BCD-PH3-LI    15.23     .972 1996.0731_15:00  205.13  n/a     .000
#***************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITHOUT INFILTRATION)  - POST DEVELOPMENT CONDITIONS
#***************************************************************************************************
#                  Set infiltration to 0 (CN = 99.99) for water balance analysis
#***************************************************************************************************
R0096:C00014------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W1         8.92     .406 1996.0731_15:00  312.66 .610     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 244.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0096:C00015------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W2         8.22     .382 1996.0731_15:00  312.66 .610     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 234.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0096:C00016------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W3         9.90     .449 1996.0731_15:00  312.66 .610     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 257.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0096:C00017------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W4         8.60     .392 1996.0731_15:00  312.66 .610     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 239.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0096:C00018------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:INF-W1         8.92     .406 1996.0731_15:00  312.66  n/a     .000
                    +     5.0 02:INF-W2         8.22     .382 1996.0731_15:00  312.66  n/a     .000
                    +     5.0 02:INF-W3         9.90     .449 1996.0731_15:00  312.66  n/a     .000
                    +     5.0 02:INF-W4         8.60     .392 1996.0731_15:00  312.66  n/a     .000
                 SUM=     5.0 01:INF-BCD-PH    35.64    1.630 1996.0731_15:00  312.66  n/a     .000
############################################################################
# CONTINUOUS RAINFALL DATA
############################################################################
  ** END OF RUN :   96

*************************************************************************************************

 RUN#:COMMAND#
R0097:C00001-------------------------------------------------------------------------------------
     START
      [TZERO =    .00 hrs on 19970101]
      [METOUT=   2    (1=imperial, 2=metric output)]
      [NSTORM=   0 ]
      [NRUN  = 0097 ]
#***************************************************************************************************
#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
#***************************************************************************************************
#  Project Name: Barrhaven Conservancy Development
#  Project Number: 1474
#  Date        : 2021/Oct/18
#  Modeller    : J.Burnett, P.Eng.
#  Company     : J.F. Sabourin and Associates
#  License #   : 2582634
#***************************************************************************************************
# Ottawa International Airport (1967 - 2003)
R0097:C00002-------------------------------------------------------------------------------------
  *  READ AES DATA
      [Filename  = YOW_1967_2007.123                                           ]
      [Start_date= 1997.0101: End_date= 1997.1231]
      {DT= 60.min: Length= 8040.hrs: WetHrs=  379: DryHrs= 7661: PTOT= 433.20}
      Maximum average rainfall intensities over
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
       12.50     7.60     5.67     4.43     2.91     1.68     1.12      .84      .63    mm/hr
       12.50    15.20    17.00    26.60    34.90    40.40    40.40    40.40    45.30    mm
      19970622 19970622 19970622 19970221 19970222 19970222 19970222 19970222 19970222  date
      Number of rainfall events per following interevent time
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         113       92       83       67       61       55       48       43       30
      Number of events with at least the following durations
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         112       70       46       20        4        0        0        0        0
R0097:C00003-------------------------------------------------------------------------------------
     COMPUTE API
      [APIini= 50.00: APIkdy= .9000: APIkdt= .9956]
      {APImax= 50.00: APIavg= 13.66: APImin=   .27}
#***************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITH INFILTRATION)  - POST DEVELOPMENT CONDITIONS
#***************************************************************************************************
R0097:C00004------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
 *  CONTINUOUS STANDHYD   5.0 01:W1             8.92     .166 1997.0622_ 4:00  176.56 .408     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 244.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W1
# Assumed trench 1.25m wide 0.4 deep, 1991m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 344 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0097:C00005------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W1             8.92     .166 1997.0622_ 4:00  176.56  n/a     .000
                out <=    5.0 01:W1-LID         5.66     .002 1997.0221_16:45  176.56  n/a     .000
           overflow <=    5.0 03:W1-LID-Out     3.26     .164 1997.0622_ 4:00  176.56  n/a     .000
     {MxStoUsed=.3440E-01  m3, TotOvfVol=.5751E+00  m3, N-Ovf=   54, TotDurOvf=   80.hrs}
R0097:C00006------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
 *  CONTINUOUS STANDHYD   5.0 01:W2             8.22     .153 1997.0622_ 4:00  176.56 .408     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 234.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W2
# Assumed trench 1.25m wide 0.4 deep, 1896m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 330 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0097:C00007------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W2             8.22     .153 1997.0622_ 4:00  176.56  n/a     .000
                out <=    5.0 01:W2-LID         5.37     .002 1997.0221_16:50  176.56  n/a     .000
           overflow <=    5.0 03:W2-LID-Out     2.85     .151 1997.0622_ 4:00  176.56  n/a     .000
     {MxStoUsed=.3300E-01  m3, TotOvfVol=.5030E+00  m3, N-Ovf=   52, TotDurOvf=   77.hrs}
R0097:C00008------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
 *  CONTINUOUS STANDHYD   5.0 01:W3             9.90     .183 1997.0622_ 4:00  176.56 .408     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 257.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W3
# Assumed trench 1.25m wide 0.4 deep, 1693m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 303 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0097:C00009------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W3             9.90     .183 1997.0622_ 4:00  176.56  n/a     .000
                out <=    5.0 01:W3-LID         5.25     .002 1997.0219_15:20  176.60  n/a     .000
           overflow <=    5.0 03:W3-LID-Out     4.65     .181 1997.0622_ 4:00  176.56  n/a     .000
     {MxStoUsed=.3029E-01  m3, TotOvfVol=.8207E+00  m3, N-Ovf=   58, TotDurOvf=  102.hrs}
R0097:C00010------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
 *  CONTINUOUS STANDHYD   5.0 01:W4             8.60     .160 1997.0622_ 4:00  176.56 .408     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 239.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W4
# Assumed trench 1.25m wide 0.4 deep, 1693m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 303 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0097:C00011------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W4             8.60     .160 1997.0622_ 4:00  176.56  n/a     .000
                out <=    5.0 01:W4-LID         5.08     .002 1997.0219_15:20  176.60  n/a     .000
           overflow <=    5.0 03:W4-LID-Out     3.52     .158 1997.0622_ 4:00  176.56  n/a     .000
     {MxStoUsed=.3029E-01  m3, TotOvfVol=.6220E+00  m3, N-Ovf=   53, TotDurOvf=   88.hrs}
R0097:C00012------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:W1             8.92     .166 1997.0622_ 4:00  176.56  n/a     .000
                    +     5.0 02:W2             8.22     .153 1997.0622_ 4:00  176.56  n/a     .000
                    +     5.0 02:W3             9.90     .183 1997.0622_ 4:00  176.56  n/a     .000
                    +     5.0 02:W4             8.60     .160 1997.0622_ 4:00  176.56  n/a     .000
                 SUM=     5.0 01:BCD-PH3       35.64     .663 1997.0622_ 4:00  176.56  n/a     .000
R0097:C00013------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:W1-LID-Out     3.26     .164 1997.0622_ 4:00  176.56  n/a     .000
                    +     5.0 02:W2-LID-Out     2.85     .151 1997.0622_ 4:00  176.56  n/a     .000
                    +     5.0 02:W3-LID-Out     4.65     .181 1997.0622_ 4:00  176.56  n/a     .000
                    +     5.0 02:W4-LID-Out     3.52     .158 1997.0622_ 4:00  176.56  n/a     .000
                 SUM=     5.0 01:BCD-PH3-LI    14.28     .654 1997.0622_ 4:00  176.56  n/a     .000
#***************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITHOUT INFILTRATION)  - POST DEVELOPMENT CONDITIONS
#***************************************************************************************************
#                  Set infiltration to 0 (CN = 99.99) for water balance analysis
#***************************************************************************************************
R0097:C00014------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W1         8.92     .277 1997.0622_ 4:00  267.24 .617     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 244.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0097:C00015------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W2         8.22     .256 1997.0622_ 4:00  267.24 .617     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 234.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0097:C00016------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W3         9.90     .307 1997.0622_ 4:00  267.24 .617     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 257.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0097:C00017------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W4         8.60     .268 1997.0622_ 4:00  267.24 .617     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 239.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0097:C00018------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:INF-W1         8.92     .277 1997.0622_ 4:00  267.24  n/a     .000
                    +     5.0 02:INF-W2         8.22     .256 1997.0622_ 4:00  267.24  n/a     .000
                    +     5.0 02:INF-W3         9.90     .307 1997.0622_ 4:00  267.24  n/a     .000
                    +     5.0 02:INF-W4         8.60     .268 1997.0622_ 4:00  267.24  n/a     .000
                 SUM=     5.0 01:INF-BCD-PH    35.64    1.108 1997.0622_ 4:00  267.24  n/a     .000
############################################################################
# CONTINUOUS RAINFALL DATA
############################################################################
  ** END OF RUN :   97

*************************************************************************************************

 RUN#:COMMAND#
R0098:C00001-------------------------------------------------------------------------------------
     START
      [TZERO =    .00 hrs on 19980101]
      [METOUT=   2    (1=imperial, 2=metric output)]
      [NSTORM=   0 ]
      [NRUN  = 0098 ]
#***************************************************************************************************
#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
#***************************************************************************************************
#  Project Name: Barrhaven Conservancy Development
#  Project Number: 1474
#  Date        : 2021/Oct/18
#  Modeller    : J.Burnett, P.Eng.
#  Company     : J.F. Sabourin and Associates
#  License #   : 2582634
#***************************************************************************************************
# Ottawa International Airport (1967 - 2003)
R0098:C00002-------------------------------------------------------------------------------------
  *  READ AES DATA
      [Filename  = YOW_1967_2007.123                                           ]
      [Start_date= 1998.0101: End_date= 1998.1231]
      {DT= 60.min: Length= 5088.hrs: WetHrs=  291: DryHrs= 4797: PTOT= 440.30}
      Maximum average rainfall intensities over
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
       15.80     8.90     7.60     4.00     2.54     1.82     1.27      .95      .76    mm/hr
       15.80    17.80    22.80    24.00    30.50    43.60    45.80    45.80    54.60    mm
      19980716 19980627 19980927 19980927 19980927 19980927 19980928 19980928 19980615  date
      Number of rainfall events per following interevent time
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         126      104       95       78       63       42       37       32       21
      Number of events with at least the following durations
```

```
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         125       64       43        8        1        0        0        0        0
R0098:C00003-----------------------------------------------------------------------------------------
     COMPUTE API
      [APIini= 50.00: APIkdy= .9000: APIkdt= .9956]
      {APImax= 57.22: APIavg= 21.28: APImin=  1.69}
#****************************************************************************************************************
#                   Barrhaven Conservancy Development Phase 3 (WITH INFILTRATION)  - POST DEVELOPMENT CONDITIONS
#****************************************************************************************************************
R0098:C00004------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
 *  CONTINUOUS STANDHYD   5.0 01:W1             8.92     .210 1998.0627_ 1:00  170.72 .388     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 244.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W1
# Assumed trench 1.25m wide 0.4 deep, 1991m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 344 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0098:C00005------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W1             8.92     .210 1998.0627_ 1:00  170.72  n/a     .000
                out <=    5.0 01:W1-LID         5.11     .002 1998.0424_18:40  170.72  n/a     .000
           overflow <=    5.0 03:W1-LID-Out     3.81     .208 1998.0627_ 1:00  170.72  n/a     .000
     {MxStoUsed=.3438E-01  m3, TotOvfVol=.6511E+00  m3, N-Ovf=   53, TotDurOvf=   58.hrs}
R0098:C00006------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
 *  CONTINUOUS STANDHYD   5.0 01:W2             8.22     .194 1998.0627_ 1:00  170.72 .388     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 234.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W2
# Assumed trench 1.25m wide 0.4 deep, 1896m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 330 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0098:C00007------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W2             8.22     .194 1998.0627_ 1:00  170.72  n/a     .000
                out <=    5.0 01:W2-LID         4.83     .002 1998.0531_ 9:30  170.72  n/a     .000
           overflow <=    5.0 03:W2-LID-Out     3.39     .192 1998.0627_ 1:00  170.72  n/a     .000
     {MxStoUsed=.3300E-01  m3, TotOvfVol=.5790E+00  m3, N-Ovf=   50, TotDurOvf=   56.hrs}
R0098:C00008------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
 *  CONTINUOUS STANDHYD   5.0 01:W3             9.90     .233 1998.0627_ 1:00  170.72 .388     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 257.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W3
# Assumed trench 1.25m wide 0.4 deep, 1693m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 303 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0098:C00009------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W3             9.90     .233 1998.0627_ 1:00  170.72  n/a     .000
                out <=    5.0 01:W3-LID         4.80     .002 1998.0424_16:40  170.75  n/a     .000
           overflow <=    5.0 03:W3-LID-Out     5.10     .231 1998.0627_ 1:00  170.72  n/a     .000
     {MxStoUsed=.3029E-01  m3, TotOvfVol=.8702E+00  m3, N-Ovf=   57, TotDurOvf=   67.hrs}
R0098:C00010------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
 *  CONTINUOUS STANDHYD   5.0 01:W4             8.60     .203 1998.0627_ 1:00  170.72 .388     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 239.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W4
# Assumed trench 1.25m wide 0.4 deep, 1693m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 303 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0098:C00011------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W4             8.60     .203 1998.0627_ 1:00  170.72  n/a     .000
                out <=    5.0 01:W4-LID         4.60     .002 1998.0424_16:40  170.75  n/a     .000
           overflow <=    5.0 03:W4-LID-Out     4.00     .201 1998.0627_ 1:00  170.72  n/a     .000
     {MxStoUsed=.3030E-01  m3, TotOvfVol=.6822E+00  m3, N-Ovf=   62, TotDurOvf=   61.hrs}
R0098:C00012------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:W1             8.92     .210 1998.0627_ 1:00  170.72  n/a     .000
                    +     5.0 02:W2             8.22     .194 1998.0627_ 1:00  170.72  n/a     .000
                    +     5.0 02:W3             9.90     .233 1998.0627_ 1:00  170.72  n/a     .000
                    +     5.0 02:W4             8.60     .203 1998.0627_ 1:00  170.72  n/a     .000
                 SUM=     5.0 01:BCD-PH3       35.64     .840 1998.0627_ 1:00  170.72  n/a     .000
R0098:C00013------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:W1-LID-Out     3.81     .208 1998.0627_ 1:00  170.72  n/a     .000
                    +     5.0 02:W2-LID-Out     3.39     .192 1998.0627_ 1:00  170.72  n/a     .000
                    +     5.0 02:W3-LID-Out     5.10     .231 1998.0627_ 1:00  170.72  n/a     .000
                    +     5.0 02:W4-LID-Out     4.00     .201 1998.0627_ 1:00  170.72  n/a     .000
                 SUM=     5.0 01:BCD-PH3-LI    16.30     .831 1998.0627_ 1:00  170.72  n/a     .000
#****************************************************************************************************************
#                   Barrhaven Conservancy Development Phase 3 (WITHOUT INFILTRATION)  - POST DEVELOPMENT CONDITIONS
#****************************************************************************************************************
#                   Set infiltration to 0 (CN = 99.99) for water balance analysis
#****************************************************************************************************************
R0098:C00014------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W1         8.92     .348 1998.0627_ 1:00  260.60 .592     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 244.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0098:C00015------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W2         8.22     .322 1998.0627_ 1:00  260.60 .592     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 234.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0098:C00016------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W3         9.90     .386 1998.0627_ 1:00  260.60 .592     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 257.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0098:C00017------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W4         8.60     .336 1998.0627_ 1:00  260.60 .592     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 239.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0098:C00018------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:INF-W1         8.92     .348 1998.0627_ 1:00  260.60  n/a     .000
                    +     5.0 02:INF-W2         8.22     .322 1998.0627_ 1:00  260.60  n/a     .000
                    +     5.0 02:INF-W3         9.90     .386 1998.0627_ 1:00  260.60  n/a     .000
                    +     5.0 02:INF-W4         8.60     .336 1998.0627_ 1:00  260.60  n/a     .000
                 SUM=     5.0 01:INF-BCD-PH    35.64    1.392 1998.0627_ 1:00  260.60  n/a     .000
################################################################################
# CONTINUOUS RAINFALL DATA
################################################################################
  ** END OF RUN :   98

*****************************************************************************************************


 RUN#:COMMAND#
R0099:C00001-----------------------------------------------------------------------------------------
     START
      [TZERO =    .00 hrs on 19990101]
      [METOUT=   2    (1=imperial, 2=metric output)]
      [NSTORM=   0 ]
      [NRUN  = 0099 ]
#****************************************************************************************************************
#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
#****************************************************************************************************************
#  Project Name: Barrhaven Conservancy Development
#  Project Number: 1474
#  Date        : 2021/Oct/18
#  Modeller    : J.Burnett, P.Eng.
#  Company     : J.F. Sabourin and Associates
#  License #   : 2582634
#****************************************************************************************************************
# Ottawa International Airport (1967 - 2003)
R0099:C00002-----------------------------------------------------------------------------------------
  *  READ AES DATA
      [Filename  = YOW_1967_2007.123                                           ]
      [Start_date= 1999.0101: End_date= 1999.1231]
      {DT= 60.min: Length= 4440.hrs: WetHrs=  247: DryHrs= 4193: PTOT= 424.40}
      Maximum average rainfall intensities over
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
       17.50    10.10     9.03     6.57     3.31     1.65     1.45     1.22      .97    mm/hr
       17.50    20.20    27.10    39.40    39.70    39.70    52.20    58.60    69.50    mm
      19990717 19990717 19990906 19990906 19990906 19990906 19990907 19990908 19990908  date
      Number of rainfall events per following interevent time
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         102       80       70       63       56       39       31       28       18
      Number of events with at least the following durations
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         101       57       31       10        1        0        0        0        0
R0099:C00003-----------------------------------------------------------------------------------------
     COMPUTE API
      [APIini= 50.00: APIkdy= .9000: APIkdt= .9956]
      {APImax= 69.51: APIavg= 23.97: APImin=  1.93}
#****************************************************************************************************************
#                   Barrhaven Conservancy Development Phase 3 (WITH INFILTRATION)  - POST DEVELOPMENT CONDITIONS
#****************************************************************************************************************
R0099:C00004------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W1             8.92     .233 1999.0717_15:00  173.26 .408     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 244.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W1
# Assumed trench 1.25m wide 0.4 deep, 1991m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 344 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0099:C00005------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W1             8.92     .233 1999.0717_15:00  173.26  n/a     .000
                out <=    5.0 01:W1-LID         4.84     .002 1999.0524_17:45  173.26  n/a     .000
           overflow <=    5.0 03:W1-LID-Out     4.08     .231 1999.0717_15:00  173.26  n/a     .000
     {MxStoUsed=.3440E-01  m3, TotOvfVol=.7069E+00  m3, N-Ovf=   57, TotDurOvf=   56.hrs}
R0099:C00006------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W2             8.22     .215 1999.0717_15:00  173.26 .408     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 234.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W2
# Assumed trench 1.25m wide 0.4 deep, 1896m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 330 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0099:C00007------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W2             8.22     .215 1999.0717_15:00  173.26  n/a     .000
                out <=    5.0 01:W2-LID         4.57     .002 1999.0524_17:50  173.26  n/a     .000
           overflow <=    5.0 03:W2-LID-Out     3.65     .213 1999.0717_15:00  173.26  n/a     .000
     {MxStoUsed=.3300E-01  m3, TotOvfVol=.6322E+00  m3, N-Ovf=   54, TotDurOvf=   55.hrs}
R0099:C00008------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W3             9.90     .259 1999.0717_15:00  173.26 .408     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 257.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W3
# Assumed trench 1.25m wide 0.4 deep, 1693m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 303 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0099:C00009------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W3             9.90     .259 1999.0717_15:00  173.26  n/a     .000
                out <=    5.0 01:W3-LID         4.52     .002 1999.0508_ 8:55  173.29  n/a     .000
           overflow <=    5.0 03:W3-LID-Out     5.38     .257 1999.0717_15:00  173.26  n/a     .000
     {MxStoUsed=.3027E-01  m3, TotOvfVol=.9328E+00  m3, N-Ovf=   64, TotDurOvf=   64.hrs}
R0099:C00010------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W4             8.60     .225 1999.0717_15:00  173.26 .408     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 239.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W4
# Assumed trench 1.25m wide 0.4 deep, 1693m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 303 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0099:C00011------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W4             8.60     .225 1999.0717_15:00  173.26  n/a     .000
                out <=    5.0 01:W4-LID         4.35     .002 1999.0508_ 8:55  173.29  n/a     .000
           overflow <=    5.0 03:W4-LID-Out     4.25     .223 1999.0717_15:00  173.26  n/a     .000
     {MxStoUsed=.3029E-01  m3, TotOvfVol=.7363E+00  m3, N-Ovf=   62, TotDurOvf=   59.hrs}
R0099:C00012------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:W1             8.92     .233 1999.0717_15:00  173.26  n/a     .000
                    +     5.0 02:W2             8.22     .215 1999.0717_15:00  173.26  n/a     .000
                    +     5.0 02:W3             9.90     .259 1999.0717_15:00  173.26  n/a     .000
                    +     5.0 02:W4             8.60     .225 1999.0717_15:00  173.26  n/a     .000
                 SUM=     5.0 01:BCD-PH3       35.64     .932 1999.0717_15:00  173.26  n/a     .000
R0099:C00013------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:W1-LID-Out     4.08     .231 1999.0717_15:00  173.26  n/a     .000
                    +     5.0 02:W2-LID-Out     3.65     .213 1999.0717_15:00  173.26  n/a     .000
                    +     5.0 02:W3-LID-Out     5.38     .257 1999.0717_15:00  173.26  n/a     .000
                    +     5.0 02:W4-LID-Out     4.25     .223 1999.0717_15:00  173.26  n/a     .000
                 SUM=     5.0 01:BCD-PH3-LI    17.36     .923 1999.0717_15:00  173.26  n/a     .000
#****************************************************************************************************************
#                   Barrhaven Conservancy Development Phase 3 (WITHOUT INFILTRATION)  - POST DEVELOPMENT CONDITIONS
#****************************************************************************************************************
#                   Set infiltration to 0 (CN = 99.99) for water balance analysis
#****************************************************************************************************************
R0099:C00014------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W1         8.92     .382 1999.0717_15:00  268.01 .632     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 244.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0099:C00015------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W2         8.22     .353 1999.0717_15:00  268.01 .632     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 234.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0099:C00016------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W3         9.90     .423 1999.0717_15:00  268.01 .632     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 257.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0099:C00017------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W4         8.60     .368 1999.0717_15:00  268.01 .632     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 239.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0099:C00018------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:INF-W1         8.92     .382 1999.0717_15:00  268.01  n/a     .000
                    +     5.0 02:INF-W2         8.22     .353 1999.0717_15:00  268.01  n/a     .000
                    +     5.0 02:INF-W3         9.90     .423 1999.0717_15:00  268.01  n/a     .000
                    +     5.0 02:INF-W4         8.60     .368 1999.0717_15:00  268.01  n/a     .000
                 SUM=     5.0 01:INF-BCD-PH    35.64    1.525 1999.0717_15:00  268.01  n/a     .000
################################################################################
# CONTINUOUS RAINFALL DATA
################################################################################
  ** END OF RUN :   99

*****************************************************************************************************


 RUN#:COMMAND#
R0100:C00001-----------------------------------------------------------------------------------------
     START
      [TZERO =    .00 hrs on 20000101]
      [METOUT=   2    (1=imperial, 2=metric output)]
      [NSTORM=   0 ]
      [NRUN  = 0100 ]
#****************************************************************************************************************
#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
#****************************************************************************************************************
#  Project Name: Barrhaven Conservancy Development
#  Project Number: 1474
#  Date        : 2021/Oct/18
#  Modeller    : J.Burnett, P.Eng.
#  Company     : J.F. Sabourin and Associates
#  License #   : 2582634
#****************************************************************************************************************
# Ottawa International Airport (1967 - 2003)
R0100:C00002-----------------------------------------------------------------------------------------
  *  READ AES DATA
      [Filename  = YOW_1967_2007.123                                           ]
      [Start_date= 2000.0101: End_date= 2000.1230]
      {DT= 60.min: Length= 5160.hrs: WetHrs=  401: DryHrs= 4759: PTOT= 535.90}
      Maximum average rainfall intensities over
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
       14.70     9.60     8.03     6.43     3.89     1.95     1.30     1.03      .84    mm/hr
       14.70    19.20    24.10    38.60    46.70    46.70    46.80    49.30    60.40    mm
      20000625 20000625 20000625 20000625 20000625 20000625 20000626 20000510 20000511  date
      Number of rainfall events per following interevent time
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         156      125      110       86       67       46       34       30       23
      Number of events with at least the following durations
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         155       82       49       16        2        0        0        0        0
R0100:C00003-----------------------------------------------------------------------------------------
     COMPUTE API
      [APIini= 50.00: APIkdy= .9000: APIkdt= .9956]
      {APImax= 76.65: APIavg= 25.66: APImin=  5.70}
#****************************************************************************************************************
#                   Barrhaven Conservancy Development Phase 3 (WITH INFILTRATION)  - POST DEVELOPMENT CONDITIONS
#****************************************************************************************************************
R0100:C00004------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W1             8.92     .231 2000.0625_10:00  212.50 .397     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 244.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W1
# Assumed trench 1.25m wide 0.4 deep, 1991m long, porosity of 0.4 with 250mm perforated pipe
```

```
# Total Volume provided by LID  - 344 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0100:C00005------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W1             8.92     .231 2000.0625_10:00  212.50  n/a     .000
                out <=    5.0 01:W1-LID         4.76     .002 2000.0421_ 6:10  212.50  n/a     .000
           overflow <=    5.0 03:W1-LID-Out     4.16     .227 2000.0625_10:00  212.50  n/a     .000
      {MxStoUsed=.3439E-01  m3, TotOvfVol=.8835E+00  m3, N-Ovf=   47, TotDurOvf=   81.hrs}
R0100:C00006------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W2             8.22     .213 2000.0625_10:00  212.50 .397     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 234.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W2
# Assumed trench 1.25m wide 0.4 deep, 1896m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 330 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0100:C00007------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W2             8.22     .213 2000.0625_10:00  212.50  n/a     .000
                out <=    5.0 01:W2-LID         4.50     .002 2000.0421_ 6:15  212.49  n/a     .000
           overflow <=    5.0 03:W2-LID-Out     3.72     .210 2000.0625_10:00  212.50  n/a     .000
      {MxStoUsed=.3300E-01  m3, TotOvfVol=.7911E+00  m3, N-Ovf=   46, TotDurOvf=   79.hrs}
R0100:C00008------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W3             9.90     .256 2000.0625_10:00  212.50 .397     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 257.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W3
# Assumed trench 1.25m wide 0.4 deep, 1693m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 303 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0100:C00009------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W3             9.90     .256 2000.0625_10:00  212.50  n/a     .000
                out <=    5.0 01:W3-LID         4.46     .002 2000.0421_ 2:50  212.54  n/a     .000
           overflow <=    5.0 03:W3-LID-Out     5.44     .252 2000.0625_10:00  212.50  n/a     .000
      {MxStoUsed=.3029E-01  m3, TotOvfVol=.1157E+01  m3, N-Ovf=   68, TotDurOvf=   94.hrs}
R0100:C00010------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W4             8.60     .223 2000.0625_10:00  212.50 .397     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 239.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W4
# Assumed trench 1.25m wide 0.4 deep, 1693m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 303 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0100:C00011------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W4             8.60     .223 2000.0625_10:00  212.50  n/a     .000
                out <=    5.0 01:W4-LID         4.29     .002 2000.0421_ 2:50  212.54  n/a     .000
           overflow <=    5.0 03:W4-LID-Out     4.31     .220 2000.0625_10:00  212.50  n/a     .000
      {MxStoUsed=.3030E-01  m3, TotOvfVol=.9155E+00  m3, N-Ovf=   65, TotDurOvf=   87.hrs}
R0100:C00012------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:W1             8.92     .231 2000.0625_10:00  212.50  n/a     .000
                  +       5.0 02:W2             8.22     .213 2000.0625_10:00  212.50  n/a     .000
                  +       5.0 02:W3             9.90     .256 2000.0625_10:00  212.50  n/a     .000
                  +       5.0 02:W4             8.60     .223 2000.0625_10:00  212.50  n/a     .000
               SUM=       5.0 01:BCD-PH3       35.64     .922 2000.0625_10:00  212.49  n/a     .000
R0100:C00013------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:W1-LID-Out     4.16     .227 2000.0625_10:00  212.50  n/a     .000
                  +       5.0 02:W2-LID-Out     3.72     .210 2000.0625_10:00  212.50  n/a     .000
                  +       5.0 02:W3-LID-Out     5.44     .252 2000.0625_10:00  212.50  n/a     .000
                  +       5.0 02:W4-LID-Out     4.31     .220 2000.0625_10:00  212.50  n/a     .000
               SUM=       5.0 01:BCD-PH3-LI    17.63     .909 2000.0625_10:00  212.50  n/a     .000
#*****************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITHOUT INFILTRATION)  - POST DEVELOPMENT CONDITIONS
#*****************************************************************************************************
#                  Set infiltration to 0 (CN = 99.99) for water balance analysis
#*****************************************************************************************************
R0100:C00014------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W1         8.92     .347 2000.0625_10:00  325.68 .608     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 244.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0100:C00015------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W2         8.22     .320 2000.0625_10:00  325.68 .608     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 234.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0100:C00016------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W3         9.90     .385 2000.0625_10:00  325.68 .608     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 257.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0100:C00017------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W4         8.60     .335 2000.0625_10:00  325.68 .608     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 239.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0100:C00018------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:INF-W1         8.92     .347 2000.0625_10:00  325.68  n/a     .000
                  +       5.0 02:INF-W2         8.22     .320 2000.0625_10:00  325.68  n/a     .000
                  +       5.0 02:INF-W3         9.90     .385 2000.0625_10:00  325.68  n/a     .000
                  +       5.0 02:INF-W4         8.60     .335 2000.0625_10:00  325.68  n/a     .000
               SUM=       5.0 01:INF-BCD-PH    35.64    1.387 2000.0625_10:00  325.68  n/a     .000
################################################################################
# CONTINUOUS RAINFALL DATA
################################################################################
  ** END OF RUN :  101

*****************************************************************************************

 RUN#:COMMAND#
R0102:C00001-------------------------------------------------------------------------------------
     START
      [TZERO =    .00 hrs on 20020101]
      [METOUT=   2    (1=imperial, 2=metric output)]
      [NSTORM=   0 ]
      [NRUN  = 0102 ]
#*****************************************************************************************************
#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
#*****************************************************************************************************
#  Project Name: Barrhaven Conservancy Development
#  Project Number: 1474
#  Date         : 2021/Oct/18
#  Modeller     : J.Burnett, P.Eng.
#  Company      : J.F. Sabourin and Associates
#  License #    : 2582634
#*****************************************************************************************************
# Ottawa International Airport (1967 - 2003)
R0102:C00002-------------------------------------------------------------------------------------
  *  READ AES DATA
      [Filename  = YOW_1967_2007.123                                         ]
      [Start_date= 2002.0101: End_date= 2002.1231]
      {DT= 60.min: Length= 5088.hrs: WetHrs=  304: DryHrs= 4784: PTOT= 551.50}
      Maximum average rainfall intensities over
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
       45.00    26.75    18.40     9.48     4.74     2.48     2.08     1.56     1.04    mm/hr
       45.00    53.50    55.20    56.90    56.90    59.50    74.90    74.90    74.90    mm
      20020627 20020627 20020627 20020627 20020627 20020627 20020627 20020628 20020629  date
      Number of rainfall events per following interevent time
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         100       83       78       56       47       41       36       34       25
      Number of events with at least the following durations
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         100       59       33       13        5        0        0        0        0
R0102:C00003-------------------------------------------------------------------------------------
     COMPUTE API
      [APIini= 50.00: APIkdy= .9000: APIkdt= .9956]
      {APImax=114.06: APIavg= 26.37: APImin=  4.40}
#*****************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITH INFILTRATION)  - POST DEVELOPMENT CONDITIONS
#*****************************************************************************************************
R0102:C00004------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W1             8.92     .940 2002.0627_14:00  252.64 .458     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 244.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W1
# Assumed trench 1.25m wide 0.4 deep, 1991m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 344 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0102:C00005------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W1             8.92     .940 2002.0627_14:00  252.64  n/a     .000
                out <=    5.0 01:W1-LID         3.84     .002 2002.0425_13:25  252.64  n/a     .000
           overflow <=    5.0 03:W1-LID-Out     5.08     .931 2002.0627_14:00  252.64  n/a     .000
      {MxStoUsed=.3436E-01  m3, TotOvfVol=.1283E+01  m3, N-Ovf=   50, TotDurOvf=   96.hrs}
R0102:C00006------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W2             8.22     .867 2002.0627_14:00  252.64 .458     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 234.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W2
# Assumed trench 1.25m wide 0.4 deep, 1896m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 330 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0102:C00007------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W2             8.22     .867 2002.0627_14:00  252.64  n/a     .000
                out <=    5.0 01:W2-LID         3.64     .002 2002.0425_13:55  252.64  n/a     .000
           overflow <=    5.0 03:W2-LID-Out     4.58     .858 2002.0627_14:00  252.64  n/a     .000
      {MxStoUsed=.3289E-01  m3, TotOvfVol=.1157E+01  m3, N-Ovf=   45, TotDurOvf=   92.hrs}
R0102:C00008------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W3             9.90    1.032 2002.0627_14:00  252.64 .458     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 257.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W3
# Assumed trench 1.25m wide 0.4 deep, 1693m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 303 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0102:C00009------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W3             9.90    1.032 2002.0627_14:00  252.64  n/a     .000
                out <=    5.0 01:W3-LID         3.51     .002 2002.0412_21:55  252.69  n/a     .000
           overflow <=    5.0 03:W3-LID-Out     6.39    1.020 2002.0627_14:00  252.64  n/a     .000
      {MxStoUsed=.3030E-01  m3, TotOvfVol=.1613E+01  m3, N-Ovf=   56, TotDurOvf=  109.hrs}
R0102:C00010------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W4             8.60     .907 2002.0627_14:00  252.64 .458     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 239.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W4
# Assumed trench 1.25m wide 0.4 deep, 1693m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 303 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0102:C00011------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W4             8.60     .907 2002.0627_14:00  252.64  n/a     .000
                out <=    5.0 01:W4-LID         3.43     .002 2002.0412_21:55  252.69  n/a     .000
           overflow <=    5.0 03:W4-LID-Out     5.17     .898 2002.0627_14:00  252.64  n/a     .000
      {MxStoUsed=.3020E-01  m3, TotOvfVol=.1307E+01  m3, N-Ovf=   59, TotDurOvf=  102.hrs}
R0102:C00012------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:W1             8.92     .940 2002.0627_14:00  252.64  n/a     .000
                  +       5.0 02:W2             8.22     .867 2002.0627_14:00  252.64  n/a     .000
                  +       5.0 02:W3             9.90    1.032 2002.0627_14:00  252.64  n/a     .000
                  +       5.0 02:W4             8.60     .907 2002.0627_14:00  252.64  n/a     .000
               SUM=       5.0 01:BCD-PH3       35.64    3.747 2002.0627_14:00  252.64  n/a     .000
R0102:C00013------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:W1-LID-Out     5.08     .931 2002.0627_14:00  252.64  n/a     .000
                  +       5.0 02:W2-LID-Out     4.58     .858 2002.0627_14:00  252.64  n/a     .000
                  +       5.0 02:W3-LID-Out     6.39    1.020 2002.0627_14:00  252.64  n/a     .000
                  +       5.0 02:W4-LID-Out     5.17     .898 2002.0627_14:00  252.64  n/a     .000
               SUM=       5.0 01:BCD-PH3-LI    21.22    3.707 2002.0627_14:00  252.64  n/a     .000
#*****************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITHOUT INFILTRATION)  - POST DEVELOPMENT CONDITIONS
#*****************************************************************************************************
#                  Set infiltration to 0 (CN = 99.99) for water balance analysis
#*****************************************************************************************************
R0102:C00014------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W1         8.92    1.103 2002.0627_14:00  391.69 .710     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 244.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0102:C00015------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W2         8.22    1.017 2002.0627_14:00  391.69 .710     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 234.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0102:C00016------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W3         9.90    1.223 2002.0627_14:00  391.69 .710     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 257.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0102:C00017------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W4         8.60    1.064 2002.0627_14:00  391.69 .710     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 239.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0102:C00018------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:INF-W1         8.92    1.103 2002.0627_14:00  391.69  n/a     .000
                  +       5.0 02:INF-W2         8.22    1.017 2002.0627_14:00  391.69  n/a     .000
                  +       5.0 02:INF-W3         9.90    1.223 2002.0627_14:00  391.69  n/a     .000
                  +       5.0 02:INF-W4         8.60    1.064 2002.0627_14:00  391.69  n/a     .000
               SUM=       5.0 01:INF-BCD-PH    35.64    4.407 2002.0627_14:00  391.69  n/a     .000
################################################################################
# CONTINUOUS RAINFALL DATA
################################################################################
  ** END OF RUN :  102

*****************************************************************************************

 RUN#:COMMAND#
R0103:C00001-------------------------------------------------------------------------------------
     START
      [TZERO =    .00 hrs on 20030101]
      [METOUT=   2    (1=imperial, 2=metric output)]
      [NSTORM=   0 ]
      [NRUN  = 0103 ]
#*****************************************************************************************************
#  SWMHYMO Ver:5.02/Jan 2001 <BETA> / INPUT DATA FILE
#*****************************************************************************************************
#  Project Name: Barrhaven Conservancy Development
#  Project Number: 1474
#  Date         : 2021/Oct/18
#  Modeller     : J.Burnett, P.Eng.
#  Company      : J.F. Sabourin and Associates
#  License #    : 2582634
#*****************************************************************************************************
# Ottawa International Airport (1967 - 2003)
R0103:C00002-------------------------------------------------------------------------------------
  *  READ AES DATA
      [Filename  = YOW_1967_2007.123                                         ]
      [Start_date= 2003.0101: End_date= 2003.1231]
      {DT= 60.min: Length= 4440.hrs: WetHrs=  406: DryHrs= 4034: PTOT= 554.60}
      Maximum average rainfall intensities over
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
       15.10    10.00     7.13     4.28     3.18     1.86     1.25      .94      .81    mm/hr
       15.10    20.00    21.40    25.70    38.20    44.60    44.90    45.10    58.30    mm
      20030711 20030711 20030711 20030711 20031021 20031015 20030525 20030526 20030527  date
      Number of rainfall events per following interevent time
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         145      127      109       86       64       45       38       25       15
      Number of events with at least the following durations
        1 hr    2 hrs    3 hrs    6 hrs   12 hrs   24 hrs   36 hrs   48 hrs   72 hrs
         144       80       43       13        5        1        0        0        0
R0103:C00003-------------------------------------------------------------------------------------
     COMPUTE API
      [APIini= 50.00: APIkdy= .9000: APIkdt= .9956]
      {APImax= 72.10: APIavg= 28.54: APImin=  4.70}
#*****************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITH INFILTRATION)  - POST DEVELOPMENT CONDITIONS
#*****************************************************************************************************
R0103:C00004------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W1             8.92     .208 2003.0711_17:00  228.03 .411     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 244.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W1
# Assumed trench 1.25m wide 0.4 deep, 1991m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 344 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0103:C00005------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W1             8.92     .208 2003.0711_17:00  228.03  n/a     .000
                out <=    5.0 01:W1-LID         4.81     .002 2003.0501_13:55  228.03  n/a     .000
           overflow <=    5.0 03:W1-LID-Out     4.11     .205 2003.0711_17:00  228.03  n/a     .000
      {MxStoUsed=.3440E-01  m3, TotOvfVol=.9382E+00  m3, N-Ovf=   49, TotDurOvf=  100.hrs}
R0103:C00006------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W2             8.22     .192 2003.0711_17:00  228.03 .411     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 234.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W2
# Assumed trench 1.25m wide 0.4 deep, 1896m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 330 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
```

```
R0103:C00007------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W2             8.22     .192 2003.0711_17:00  228.03  n/a     .000
                out <=    5.0 01:W2-LID         4.53     .002 2003.0501_14:00  228.03  n/a     .000
           overflow <=    5.0 03:W2-LID-Out     3.69     .189 2003.0711_17:00  228.03  n/a     .000
     {MxStoUsed=.3300E-01  m3, TotOvfVol=.8410E+00  m3, N-Ovf=   47, TotDurOvf=   98.hrs}
R0103:C00008------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W3             9.90     .231 2003.0711_17:00  228.03 .411     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 257.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W3
# Assumed trench 1.25m wide 0.4 deep, 1693m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 303 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0103:C00009------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W3             9.90     .231 2003.0711_17:00  228.03  n/a     .000
                out <=    5.0 01:W3-LID         4.55     .002 2003.0501_ 2:30  228.08  n/a     .000
           overflow <=    5.0 03:W3-LID-Out     5.35     .228 2003.0711_17:00  228.03  n/a     .000
     {MxStoUsed=.3030E-01  m3, TotOvfVol=.1221E+01  m3, N-Ovf=   68, TotDurOvf=  120.hrs}
R0103:C00010------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:W4             8.60     .201 2003.0711_17:00  228.03 .411     .000
      [XIMP=.54:TIMP=.64]
      [Horton parameters: Fo= 76.20:Fc= 13.20:DCAY=4.14:  F= .00]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 239.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
# LID for Outlet W4
# Assumed trench 1.25m wide 0.4 deep, 1693m long, porosity of 0.4 with 250mm perforated pipe
# Total Volume provided by LID  - 303 mÂ³
# Soil infiltration rates assumed at 9mm/hr with a safety factor of 2.5
R0103:C00011------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ROUTE RESERVOIR ->    5.0 02:W4             8.60     .201 2003.0711_17:00  228.03  n/a     .000
                out <=    5.0 01:W4-LID         4.37     .002 2003.0501_ 2:30  228.08  n/a     .000
           overflow <=    5.0 03:W4-LID-Out     4.23     .198 2003.0711_17:00  228.03  n/a     .000
     {MxStoUsed=.3030E-01  m3, TotOvfVol=.9655E+00  m3, N-Ovf=   51, TotDurOvf=  106.hrs}
R0103:C00012------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:W1             8.92     .208 2003.0711_17:00  228.03  n/a     .000
                    +     5.0 02:W2             8.22     .192 2003.0711_17:00  228.03  n/a     .000
                    +     5.0 02:W3             9.90     .231 2003.0711_17:00  228.03  n/a     .000
                    +     5.0 02:W4             8.60     .201 2003.0711_17:00  228.03  n/a     .000
                 SUM=     5.0 01:BCD-PH3       35.64     .832 2003.0711_17:00  228.03  n/a     .000
R0103:C00013------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:W1-LID-Out     4.11     .205 2003.0711_17:00  228.03  n/a     .000
                    +     5.0 02:W2-LID-Out     3.69     .189 2003.0711_17:00  228.02  n/a     .000
                    +     5.0 02:W3-LID-Out     5.35     .228 2003.0711_17:00  228.03  n/a     .000
                    +     5.0 02:W4-LID-Out     4.23     .198 2003.0711_17:00  228.03  n/a     .000
                 SUM=     5.0 01:BCD-PH3-LI    17.39     .819 2003.0711_17:00  228.03  n/a     .000
#**************************************************************************************************************
#                  Barrhaven Conservancy Development Phase 3 (WITHOUT INFILTRATION)  - POST DEVELOPMENT CONDITIONS
#**************************************************************************************************************
#                  Set infiltration to 0 (CN = 99.99) for water balance analysis
#**************************************************************************************************************
R0103:C00014------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W1         8.92     .358 2003.0711_17:00  358.61 .647     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 244.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0103:C00015------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W2         8.22     .330 2003.0711_17:00  358.61 .647     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 234.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0103:C00016------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W3         9.90     .396 2003.0711_17:00  358.61 .647     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 257.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0103:C00017------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    CONTINUOUS STANDHYD   5.0 01:INF-W4         8.60     .345 2003.0711_17:00  358.61 .647     .000
      [XIMP=.54:TIMP=.64]
      [LOSS= 2 :CN=100.0]
      [Pervious     area: IAper= 4.67:SLPP=2.00:LGP=  40.:MNP=.250:SCP=   .0]
      [Impervious   area: IAimp= 1.57:SLPI= .50:LGI= 239.:MNI=.013:SCI=   .0]
      [IaRECimp=   1.50: IaRECper=   6.00]
      [SMIN=  1.39: SMAX=  9.24: SK= .030]
R0103:C00018------------DTmin-ID:NHYD---------AREAha-QPEAKcms-TpeakDate_hh:mm----RVmm-R.C.---DWFcms
    ADD HYD               5.0 02:INF-W1         8.92     .358 2003.0711_17:00  358.61  n/a     .000
                    +     5.0 02:INF-W2         8.22     .330 2003.0711_17:00  358.61  n/a     .000
                    +     5.0 02:INF-W3         9.90     .396 2003.0711_17:00  358.61  n/a     .000
                    +     5.0 02:INF-W4         8.60     .345 2003.0711_17:00  358.61  n/a     .000
                 SUM=     5.0 01:INF-BCD-PH    35.64    1.430 2003.0711_17:00  358.61  n/a     .000
################################################################################
# CONTINUOUS RAINFALL DATA
################################################################################
R0103:C00002----------------------------------------------------------------------------------------
    FINISH
----------------------------------------------------------------------------------------------------
****************************************************************************************************
     WARNINGS / ERRORS / NOTES
     -------------------------
R0067:C00002  READ AES DATA
*** WARNING: Requested start date is less than start date in file.
*** WARNING: Missing rainfall increments were set to 0.
*** WARNING: Missing rainfall increments were set to 0.
*** WARNING: Missing rainfall increments were set to 0.
*** WARNING: Missing rainfall increments were set to 0.
*** WARNING: Missing rainfall increments were set to 0.
*** WARNING: Missing rainfall increments were set to 0.
*** WARNING: Missing rainfall increments were set to 0.
*** WARNING: Missing rainfall increments were set to 0.
*** WARNING: Missing rainfall increments were set to 0.
*** WARNING: Missing rainfall increments were set to 0.
R0076:C00004  CONTINUOUS STANDHYD
*** NOTE: The pervious area has no runoff.
R0076:C00006  CONTINUOUS STANDHYD
*** NOTE: The pervious area has no runoff.
R0076:C00008  CONTINUOUS STANDHYD
*** NOTE: The pervious area has no runoff.
R0076:C00010  CONTINUOUS STANDHYD
*** NOTE: The pervious area has no runoff.
R0077:C00002  READ AES DATA
*** WARNING: Requested start date is less than start date in file.
*** WARNING: Missing rainfall increments were set to 0.
*** WARNING: Missing rainfall increments were set to 0.
*** WARNING: Missing rainfall increments were set to 0.
*** WARNING: Missing rainfall increments were set to 0.
R0080:C00004  CONTINUOUS STANDHYD
*** NOTE: The pervious area has no runoff.
R0080:C00006  CONTINUOUS STANDHYD
*** NOTE: The pervious area has no runoff.
R0080:C00008  CONTINUOUS STANDHYD
*** NOTE: The pervious area has no runoff.
R0080:C00010  CONTINUOUS STANDHYD
*** NOTE: The pervious area has no runoff.
R0081:C00002  READ AES DATA
*** WARNING: Missing rainfall increments were set to 0.
*** WARNING: Missing rainfall increments were set to 0.
*** WARNING: Missing rainfall increments were set to 0.
R0083:C00004  CONTINUOUS STANDHYD
*** NOTE: The pervious area has no runoff.
R0083:C00006  CONTINUOUS STANDHYD
*** NOTE: The pervious area has no runoff.
R0083:C00008  CONTINUOUS STANDHYD
*** NOTE: The pervious area has no runoff.
R0083:C00010  CONTINUOUS STANDHYD
*** NOTE: The pervious area has no runoff.
R0084:C00002  READ AES DATA
*** WARNING: Missing rainfall increments were set to 0.
*** WARNING: Missing rainfall increments were set to 0.
*** WARNING: Missing rainfall increments were set to 0.
*** WARNING: Requested start date is less than start date in file.
*** WARNING: Missing rainfall increments were set to 0.
*** WARNING: Missing rainfall increments were set to 0.
*** WARNING: Missing rainfall increments were set to 0.
*** WARNING: Requested start date is less than start date in file.
*** WARNING: Missing rainfall increments were set to 0.
*** WARNING: Missing rainfall increments were set to 0.
R0091:C00004  CONTINUOUS STANDHYD
*** NOTE: The pervious area has no runoff.
R0091:C00006  CONTINUOUS STANDHYD
*** NOTE: The pervious area has no runoff.
R0091:C00008  CONTINUOUS STANDHYD
*** NOTE: The pervious area has no runoff.
R0091:C00010  CONTINUOUS STANDHYD
*** NOTE: The pervious area has no runoff.
R0092:C00002  READ AES DATA
*** WARNING: Missing rainfall increments were set to 0.
*** WARNING: Missing rainfall increments were set to 0.
R0093:C00004  CONTINUOUS STANDHYD
*** NOTE: The pervious area has no runoff.
R0093:C00006  CONTINUOUS STANDHYD
*** NOTE: The pervious area has no runoff.
R0093:C00008  CONTINUOUS STANDHYD
*** NOTE: The pervious area has no runoff.
R0093:C00010  CONTINUOUS STANDHYD
*** NOTE: The pervious area has no runoff.
R0094:C00002  READ AES DATA
*** WARNING: Missing rainfall increments were set to 0.
*** WARNING: Missing rainfall increments were set to 0.
*** WARNING: Requested start date is less than start date in file.
*** WARNING: Missing rainfall increments were set to 0.
R0096:C00004  CONTINUOUS STANDHYD
*** NOTE: The pervious area has no runoff.
R0096:C00006  CONTINUOUS STANDHYD
*** NOTE: The pervious area has no runoff.
R0096:C00008  CONTINUOUS STANDHYD
*** NOTE: The pervious area has no runoff.
R0096:C00010  CONTINUOUS STANDHYD
*** NOTE: The pervious area has no runoff.
R0097:C00002  READ AES DATA
*** WARNING: Missing rainfall increments were set to 0.
R0097:C00004  CONTINUOUS STANDHYD
*** NOTE: The pervious area has no runoff.
R0097:C00006  CONTINUOUS STANDHYD
*** NOTE: The pervious area has no runoff.
R0097:C00008  CONTINUOUS STANDHYD
*** NOTE: The pervious area has no runoff.
R0097:C00010  CONTINUOUS STANDHYD
*** NOTE: The pervious area has no runoff.
R0098:C00002  READ AES DATA
*** WARNING: Requested start date is less than start date in file.
*** WARNING: Missing rainfall increments were set to 0.
R0098:C00004  CONTINUOUS STANDHYD
*** NOTE: The pervious area has no runoff.
R0098:C00006  CONTINUOUS STANDHYD
*** NOTE: The pervious area has no runoff.
R0098:C00008  CONTINUOUS STANDHYD
*** NOTE: The pervious area has no runoff.
R0098:C00010  CONTINUOUS STANDHYD
*** NOTE: The pervious area has no runoff.
R0099:C00002  READ AES DATA
*** WARNING: Requested start date is less than start date in file.
*** WARNING: Missing rainfall increments were set to 0.
*** WARNING: Requested start date is less than start date in file.
*** WARNING: Missing rainfall increments were set to 0.
*** WARNING: Requested start date is less than start date in file.
*** WARNING: Missing rainfall increments were set to 0.
*** WARNING: Requested start date is less than start date in file.
*** WARNING: Missing rainfall increments were set to 0.
   Simulation ended on 2021-10-19     at 10:04:29
==============================================================================================
```

Ottawa. ON
Paris. ON
Gatineau. QC
Montréal. QC
Québec. QC

Attachment B

Water Budget Results

Table B1: BCD Phase 3 - Pre Development Water Budget

Year	Total Rainfall		Runoff (No Infiltration)		Evaporation		Runoff		Infiltration	
	(mm)	(m^3)	(mm)	(m^3)	(mm)	(m^3)	(mm)	(m^3)	(mm)	(m^3)
1967	386.9	137,891	190.21	67,791	196.7	70,100	36.4	12,962	153.8	54,829
1968	592.8	211,274	257.40	91,737	335.4	119,537	38.2	13,618	219.2	78,119
1969	570.3	203,255	233.70	83,291	336.6	119,964	30.5	10,870	203.2	72,420
1970	558.9	199,192	222.47	79,288	336.4	119,904	29.9	10,649	192.6	68,639
1971	522.1	186,076	181.82	64,801	340.3	121,276	22.3	7,937	159.6	56,864
1972	784.3	279,525	375.41	133,796	408.9	145,728	71.4	25,447	304.0	108,349
1973	744.9	265,482	337.66	120,342	407.2	145,140	51.0	18,180	286.7	102,162
1974	386.2	137,642	119.81	42,700	266.4	94,941	13.4	4,758	106.5	37,942
1975	535.5	190,852	219.51	78,233	316.0	112,619	30.7	10,938	188.8	67,295
1976	493.2	175,776	170.05	60,606	323.2	115,171	19.7	7,007	150.4	53,599
1977	677.8	241,568	283.86	101,168	393.9	140,400	39.5	14,081	244.4	87,086
1978	641.4	228,595	269.84	96,171	371.6	132,424	29.6	10,560	240.2	85,611
1979	866.5	308,821	449.28	160,123	417.2	148,697	82.8	29,496	366.5	130,628
1980	622	221,681	254.15	90,579	367.9	131,102	32.8	11,686	221.4	78,893
1981	936.4	333,733	459.70	163,837	476.7	169,896	116.7	41,599	343.0	122,238
1982	596.1	212,450	228.69	81,505	367.4	130,945	26.0	9,263	202.7	72,242
1983	587.5	209,385	217.30	77,446	370.2	131,939	28.9	10,289	188.4	67,156
1984	459.4	163,730	207.21	73,850	252.2	89,881	27.6	9,830	179.6	64,020
1985	559.9	199,548	262.29	93,480	297.6	106,068	29.0	10,336	233.3	83,145
1986	849.4	302,726	418.06	148,997	431.3	153,730	88.5	31,556	329.5	117,441
1987	640.1	228,132	240.27	85,632	399.8	142,499	40.5	14,431	199.8	71,202
1988	643.8	229,450	255.71	91,135	388.1	138,315	37.6	13,390	218.1	77,745
1989	523.2	186,468	197.69	70,457	325.5	116,012	23.0	8,187	174.7	62,270
1990	727.8	259,388	311.89	111,158	415.9	148,230	48.0	17,097	263.9	94,061
1991	556	198,158	197.89	70,528	358.1	127,630	25.5	9,095	172.4	61,433
1992	732.8	261,170	326.37	116,318	406.4	144,852	55.2	19,680	271.2	96,638
1993	721.3	257,071	264.26	94,182	457.0	162,889	34.7	12,378	229.5	81,804
1994	540.2	192,527	227.40	81,045	312.8	111,482	34.1	12,146	193.3	68,899
1995	538.5	191,921	327.35	116,668	211.2	75,254	107.0	38,142	220.3	78,526
1996	512.2	182,548	195.06	69,519	317.1	113,029	25.5	9,095	169.5	60,424
1997	433.2	154,392	161.58	57,587	271.6	96,805	15.1	5,382	146.5	52,205
1998	440.3	156,923	163.10	58,129	277.2	98,794	17.7	6,315	145.4	51,813
1999	424.4	151,256	171.71	61,197	252.7	90,059	18.5	6,586	153.2	54,611
2000	535.9	190,995	214.65	76,501	321.3	114,494	31.8	11,319	182.9	65,182
2002	551.5	196,555	294.04	104,796	257.5	91,759	62.7	22,357	231.3	82,439
2003	554.6	197,659	251.88	89,770	302.7	107,889	43.2	15,379	208.7	74,391
Minimum	386.2	137,642	120	42700	196.7	70,100	13.4	4,758	106.5	37,942
Maximum	936.4	333,733	460	163837	476.7	169,896	116.7	41,599	366.5	130,628
Average	595.8	212,328	254	90677	341.3	121,651	40.7	14,501	213.7	76,176
Percentage	100.0%	100.0%	42.7%	42.7%	57.3%	57.3%	6.8%	6.8%	35.9%	35.9%

Table B2: BCD Phase 3 - Post Development Water Budget - Without LIDs

Year	Total Rainfall		Runoff (No Infiltration)		Evaporation		Runoff		Infiltration	
	(mm)	(m^3)	(mm)	(m^3)	(mm)	(m^3)	(mm)	(m^3)	(mm)	(m^3)
1967	386.9	137,891	264.01	94,093	122.9	43,798	165.9	59,116	98.1	34,977
1968	592.8	211,274	378.65	134,951	214.2	76,323	247.5	88,213	131.1	46,738
1969	570.3	203,255	349.05	124,401	221.3	78,854	226.7	80,778	122.4	43,623
1970	558.9	199,192	341.01	121,536	217.9	77,656	230.7	82,211	110.3	39,325
1971	522.1	186,076	300.01	106,924	222.1	79,153	201.4	71,779	98.6	35,145
1972	784.3	279,525	527.33	187,940	257.0	91,584	345.7	123,190	181.7	64,751
1973	744.9	265,482	478.82	170,651	266.1	94,831	312.2	111,282	166.6	59,369
1974	386.2	137,642	211.02	75,208	175.2	62,434	143.3	51,086	67.7	24,121
1975	535.5	190,852	336.48	119,921	199.0	70,931	224.3	79,930	112.2	39,992
1976	493.2	175,776	279.75	99,703	213.5	76,074	184.8	65,845	95.0	33,858
1977	677.8	241,568	430.70	153,501	247.1	88,066	281.6	100,359	149.1	53,143
1978	641.4	228,595	413.06	147,215	228.3	81,380	273.5	97,483	139.5	49,732
1979	866.5	308,821	604.35	215,390	262.2	93,430	384.0	136,847	220.4	78,543
1980	622	221,681	393.13	140,112	228.9	81,569	255.1	90,907	138.1	49,205
1981	936.4	333,733	632.43	225,398	304.0	108,335	416.2	148,316	216.3	77,082
1982	596.1	212,450	372.35	132,706	223.8	79,745	246.6	87,878	125.8	44,828
1983	587.5	209,385	355.31	126,632	232.2	82,753	234.3	83,508	121.0	43,124
1984	459.4	163,730	303.36	108,118	156.0	55,613	192.8	68,728	110.5	39,389
1985	559.9	199,548	379.24	135,161	180.7	64,387	241.8	86,192	137.4	48,969
1986	849.4	302,726	579.81	206,644	269.6	96,082	363.5	129,544	216.3	77,100
1987	640.1	228,132	383.53	136,690	256.6	91,442	254.0	90,529	129.5	46,161
1988	643.8	229,450	390.26	139,089	253.5	90,362	261.2	93,099	129.0	45,990
1989	523.2	186,468	314.66	112,145	208.5	74,324	207.9	74,110	106.7	38,035
1990	727.8	259,388	456.65	162,750	271.2	96,638	293.1	104,457	163.6	58,293
1991	556	198,158	331.20	118,040	224.8	80,119	221.6	78,985	109.6	39,054
1992	732.8	261,170	471.31	167,975	261.5	93,195	308.6	109,985	162.7	57,990
1993	721.3	257,071	434.50	154,856	286.8	102,216	288.4	102,782	146.1	52,074
1994	540.2	192,527	341.46	121,696	198.7	70,831	220.0	78,390	121.5	43,306
1995	538.5	191,921	404.90	144,306	133.6	47,615	247.1	88,052	157.8	56,254
1996	512.2	182,548	312.66	111,432	199.5	71,116	205.1	73,108	107.5	38,324
1997	433.2	154,392	267.24	95,244	166.0	59,148	176.6	62,926	90.7	32,318
1998	440.3	156,923	260.60	92,878	179.7	64,045	170.7	60,845	89.9	32,033
1999	424.4	151,256	268.01	95,519	156.4	55,737	173.3	61,750	94.8	33,769
2000	535.9	190,995	325.68	116,072	210.2	74,922	212.5	75,731	113.2	40,341
2002	551.5	196,555	391.69	139,598	159.8	56,956	252.6	90,041	139.1	49,557
2003	554.6	197,659	358.61	127,809	196.0	69,851	228.0	81,270	130.6	46,539
Minimum	386.2	137,642	211	75208	122.9	43,798	143.3	51,086	67.7	24,121
Maximum	936.4	333,733	632	225398	304.0	108,335	416.2	148,316	220.4	78,543
Average	595.8	212,328	379	135064	216.8	77,264	247.0	88,035	132.0	47,029
Percentage	100.0%	100.0%	63.6%	63.6%	36.4%	36.4%	41.5%	41.5%	22.1%	22.1%

Table B3: BCD Phase 3- Post Development Water Budget - With LIDs

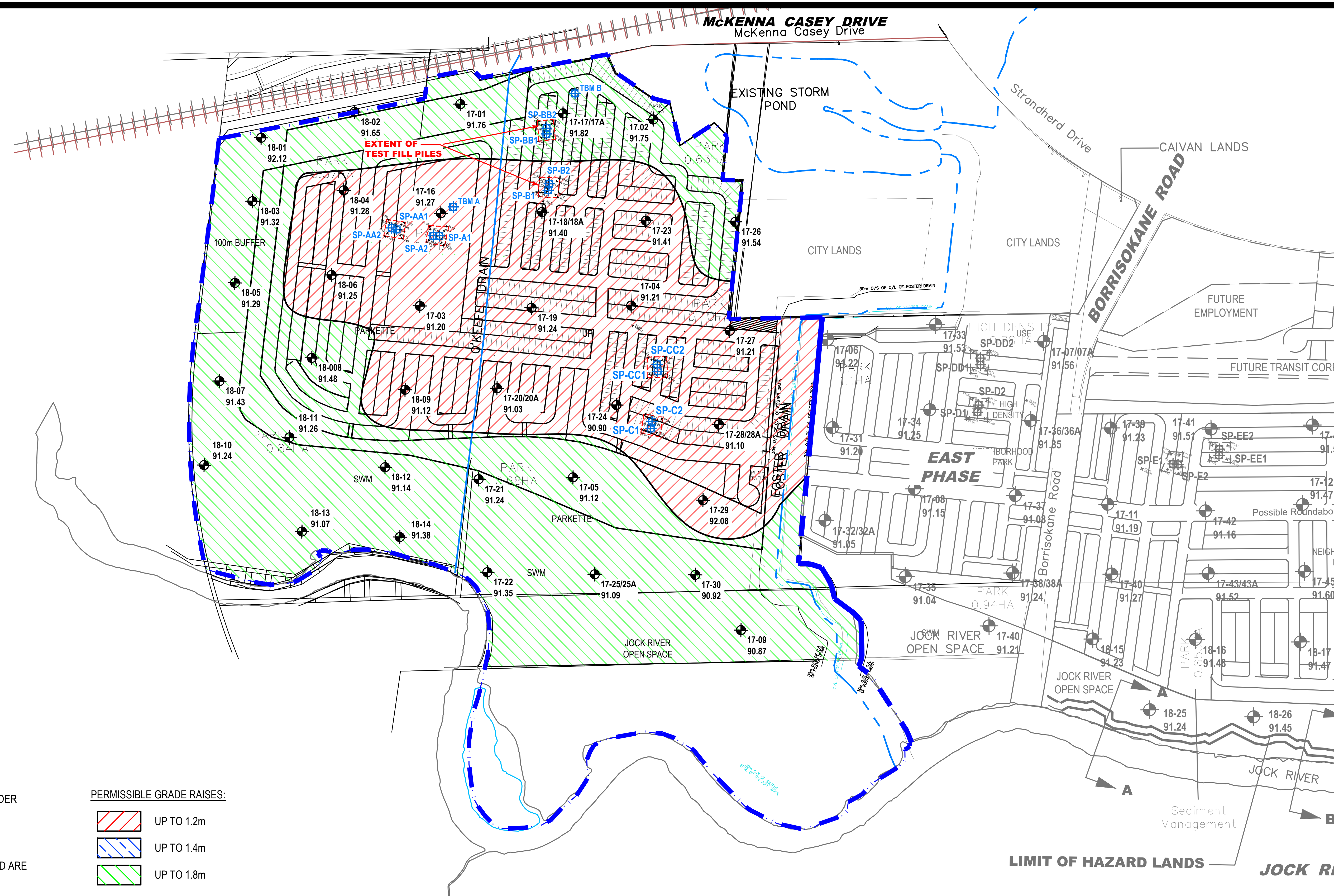
Year	Total Rainfall		Runoff (No Infiltration)		Evaporation		Runoff		Infiltration	
	(mm)	(m^3)	(mm)	(m^3)	(mm)	(m^3)	(mm)	(m^3)	(mm)	(m^3)
1967	386.9	137,891	264.01	94,093	122.9	43,798	91.8	32,726	172.2	61,367
1968	592.8	211,274	378.65	134,951	214.2	76,323	118.5	42,225	260.2	92,726
1969	570.3	203,255	349.05	124,401	221.3	78,854	108.3	38,598	240.7	85,803
1970	558.9	199,192	341.01	121,536	217.9	77,656	111.8	39,860	229.2	81,676
1971	522.1	186,076	300.01	106,924	222.1	79,153	83.4	29,727	216.6	77,197
1972	784.3	279,525	527.33	187,940	257.0	91,584	197.5	70,374	329.9	117,566
1973	744.9	265,482	478.82	170,651	266.1	94,831	168.7	60,137	310.1	110,514
1974	386.2	137,642	211.02	75,208	175.2	62,434	51.6	18,405	159.4	56,803
1975	535.5	190,852	336.48	119,921	199.0	70,931	108.7	38,730	227.8	81,192
1976	493.2	175,776	279.75	99,703	213.5	76,074	75.8	27,010	204.0	72,692
1977	677.8	241,568	430.70	153,501	247.1	88,066	133.2	47,476	297.5	106,025
1978	641.4	228,595	413.06	147,215	228.3	81,380	132.2	47,100	280.9	100,114
1979	866.5	308,821	604.35	215,390	262.2	93,430	228.5	81,440	375.8	133,950
1980	622	221,681	393.13	140,112	228.9	81,569	121.7	43,387	271.4	96,724
1981	936.4	333,733	632.43	225,398	304.0	108,335	236.0	84,104	396.4	141,294
1982	596.1	212,450	372.35	132,706	223.8	79,745	101.9	36,320	270.4	96,386
1983	587.5	209,385	355.31	126,632	232.2	82,753	98.1	34,959	257.2	91,673
1984	459.4	163,730	303.36	108,118	156.0	55,613	98.3	35,039	205.0	73,078
1985	559.9	199,548	379.24	135,161	180.7	64,387	128.4	45,756	250.9	89,405
1986	849.4	302,726	579.81	206,644	269.6	96,082	198.6	70,768	381.2	135,877
1987	640.1	228,132	383.53	136,690	256.6	91,442	116.3	41,454	267.2	95,236
1988	643.8	229,450	390.26	139,089	253.5	90,362	126.7	45,139	263.6	93,950
1989	523.2	186,468	314.66	112,145	208.5	74,324	89.8	32,002	224.9	80,143
1990	727.8	259,388	456.65	162,750	271.2	96,638	140.6	50,118	316.0	112,632
1991	556	198,158	331.20	118,040	224.8	80,119	86.7	30,894	244.5	87,146
1992	732.8	261,170	471.31	167,975	261.5	93,195	159.4	56,813	311.9	111,162
1993	721.3	257,071	434.50	154,856	286.8	102,216	121.7	43,374	312.8	111,482
1994	540.2	192,527	341.46	121,696	198.7	70,831	111.4	39,701	230.1	81,995
1995	538.5	191,921	404.90	144,306	133.6	47,615	160.4	57,170	244.5	87,137
1996	512.2	182,548	312.66	111,432	199.5	71,116	87.7	31,241	225.0	80,191
1997	433.2	154,392	267.24	95,244	166.0	59,148	70.7	25,213	196.5	70,032
1998	440.3	156,923	260.60	92,878	179.7	64,045	78.1	27,827	182.5	65,050
1999	424.4	151,256	268.01	95,519	156.4	55,737	84.4	30,078	183.6	65,441
2000	535.9	190,995	325.68	116,072	210.2	74,922	105.1	37,464	220.6	78,609
2002	551.5	196,555	391.69	139,598	159.8	56,956	150.4	53,610	241.3	85,988
2003	554.6	197,659	358.61	127,809	196.0	69,851	111.3	39,654	247.3	88,154
Minimum	386.2	137,642	211	75208	122.9	43,798	51.6	18,405	159.4	56,803
Maximum	936.4	333,733	632	225398	304.0	108,335	236.0	84,104	396.4	141,294
Average	595.8	212,328	379	135064	216.8	77,264	122.0	43,497	256.9	91,567
Percentage	100.0%	100.0%	63.6%	63.6%	36.4%	36.4%	20.5%	20.5%	43.1%	43.1%

Table B4- LID Infiltration Summary

LID	Area (ha)	Average Annual Infiltration Volume (m^3/Yr)	Average Annual Infiltration Volume (mm/Yr)
W1	8.92	11,749	132
W2	8.22	11,093	135
W3	9.9	11,080	112
W4	8.6	10,620	123
Total/Average	**35.64**	**44,543**	**125.5**

APPENDIX E

GEOTECHNICAL



LEGEND:

APPROXIMATE BOREHOLE LOCATION (GOLDER ASSOCIATES, 04/2019)

91.07 GROUND SURFACE ELEVATION (m)

BOREHOLE LOCATIONS WERE SURVEYED BY OTHERS AND ARE REFERENCED TO A GEODETIC DATUM.

PERMISSIBLE GRADE RAISES:

- UP TO 1.2m
- UP TO 1.4m
- UP TO 1.8m

patersongroup
consulting engineers

154 Colonnade Road South
Ottawa, Ontario K2E 7J5
Tel: (613) 226-7381 Fax: (613) 226-6344

NO.	REVISIONS	DATE	INITIAL
1	UPDATED TO LATEST CONCEPTUAL PLAN	19/10/2021	OC

CAIVAN COMMUNITIES

GEOTECHNICAL INVESTIGATION
PROP. RESIDENTIAL DEVELOPMENT - CONSERVANCY LANDS WEST
OTTAWA, ONTARIO

Title: **PERMISSIBLE GRADE RAISE PLAN**

Scale: 1:5000	Date: 09/2019
Drawn by: MPG	Report No.: PG5036-2
Checked by: SD	**PG5036-5**
Approved by: SD	Revision No.:

c:\users\robertg\documents\pg5036\pg5036-1-thp west land (rev.02).dwg

11x17